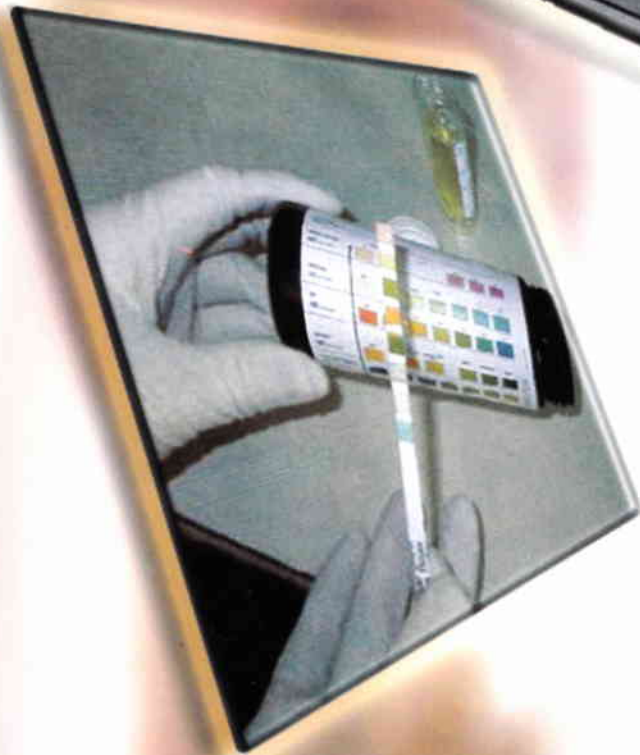


SECOND EDITION

Clinical **Obstetrics & Gynecology**



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CLINICAL OBSTETRICS AND GYNECOLOGY

By

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PREPARE

"Education is the kindling of a flame not the filling of a vessel"

-Socrates

"Clinical obstetrics and gynecology" is designed to complement, not replace, more weighty sources. It is intended as a touchstone for testing students' mastery of already gained knowledge, a good use for this book during both the clerkship and while preparing for the inevitable final exam.

As the underlying philosophy remains the same, the main changes in the second edition are the addition of new material and revision of existing material. Revision of existing material has been extensive with many detailed changes aimed at expanding the factual base while retaining or improving the clarity of explanation.

Most importantly, many of the changes are those which have been suggested by readers and reviewers of the previous edition; this feedback has been invaluable to the authors and we now hope will be equally valuable to readers of the new edition.

In this edition we wish to express our particular gratitude to Rhaled Zimmo, Salem Gamal Albohesy, Amr sakr, Nesreen Omara, Hany Ibrahim, Haitham Kamal & Samer Essam Eldin for their help and suggestion.

Sobhi Abou Louz, Mohammed Elsokkary, Walid Hetler

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ALL SHEETS

- ١- الوقوف على يمين المريضة (نسلم على العيانة).
- ٢- أسأل المريضة عن سبب حجزها في المستشفى علشان تعرف اذا كانت الحالة Obstetric (حامل) ولا Gyne (غير حامل) وبالمرّة تعرف Specific sheet

- Be logic & chronologic
- Always think if the patient is pregnant or not ؟؟؟
- Aim: trying to reach a diagnosis (with followed examination & investigations).

Personal history: 7 points سبعة

1. **Name:** the first three names الاسم (ثلاثي)
 - ❖ To call the patient by her name (to be familiar with the patient)
 - ❖ For patient file registration
 - ❖ To know her religion
 - ❖ May know the cultural background

2. **Age:** عندك كام سنة

a- It may suggest a certain etiology e.g bleeding

- PrepubertalForeign body
- Pubertal..... Coagulation defect
- Child bearing periodcomplications of pregnancy or contraception
- PerimenopausalDUB, fibroid
- Postmenopausalendometrial carcinoma

b- Definition of some diseases as amenorrhea:

- 14 years1ry amenorrhea

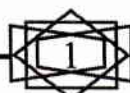
c- Treatment:

	Young Conservation	Old Radical	Very old Conservation
Prolapse	Sling	VH + PFR	-Le-Fort
Fibroid	Myomectomy	Hysterectomy	-wait 4 atrophy
End. Hyperpla.	Progesterone	Hysterectomy	
Endometriosis	Progesterone	Hysterectomy	
Infertility	Induction of ov.	IVF & ET	
Contraception	IUCDCOC	Sterilization	
Infection	Salpingectomy	Pelvic clearance	

d- Prognosis: better in

- ☛ Youngttt of infertility or tumors
- ☛ Oldfibroid or endometriosis may decrease
- ☛ lowest rate of MMR & PNMR is 20-26

Adolescent pregnancy	Pregnancy in old age (>35yrs)
Nutritional deficiency (immaturity)	Nutritional deficiency (consumption)
Hypertensive disorders	HTN + DM
Dystocia (small pelvis)	Dystocia (osteomalacic pelvis)
Social & economic	Chromosomal ...Down \$
Increased abortion, IUGR, PTL	



3. **Residence:** may know her race.

- **Black**.....fibroid, cervical cancer.
- **White**endometrial carcinoma .
- **Caucasian**endometriosis.
- **Far East**VM, choriocarcinoma (not proved nowadays).

Living inin details (city, street, building, phone number)➤ **Importance :**

- ⇒ To contact the patient e.g missed RH injection.
- ⇒ Rural areas ...bilharziasis, filariasis.
- ⇒ Damp non sunny areasrheumatic heart disease.

4. **Marital status:**

متجوزة من كام سنة- حتى لو كانت مش متجوزة مش حتزعل

- Married since 1980 ...or ...married for 27 years:

- Or widow for Year.
- Or divorced for Year.
- Or single.

- Take care if:

- If this is the second marriage, usually she will not tell you.
- If having a period of infertilityprecious baby.

- Virgins:

- No PV (P/R), no transvaginal u/s (abdominal).
- More liable to all hyper estrogenic diseases.

- Delayed marriagemore anxious about fertility problems.

- Married +amenorrhea, 1st investigation is β -HCG.5. **Parity (TPAL system):**

- ✓ How many living children
- ✓ How many ♂ & ♀
- ✓ How old is the youngest

مخلقة ادايه
عندك كام عيل عايش
كام ولد و كام بنت
الصغير عنده كام سنة

✚ She is para ...+...

✚ Nulligravida

✚ Nullipara

لم تحمل من قبل

لم تلد من قبل

✚ Gravidity: the number of pregnancies including; full term, preterm and abortions

✚ Parity: number of deliveries including full term and preterm

✚ N.B. if she is pregnant >> add the present pregnancy on the number of gravidity and put this number in front of GP.

✚ PG ...more liable to uterine inertia, elderly PG (indication of cesarean section).

✚ MGmore liable to rupture uterus, grandmultipara, pendulous abdomen

6. Occupation:

- stressful occupation ...ischemic heart disease
- Exposure to infectious hazards (Doctors) ...hepatitis B virus
- Exposure to teratogenic hazards ...radiations ,chemicals
- Long standing (teacher, long flights)...varicose veins & DVT

7. Special habits

هل بتدخني (كام سيجارة يوميا)

- **Smoking, alcoholics, drug addiction**abortion, IUGR, preterm labor, IUFD, accidental hge
- **Pets**Toxoplasmosis (no relation to habitual abortion)
- **Other important habits**
 - High vaginal douchinginfection
 - Tooth washingdental caries (Ca consumption)
 - Excessive tea & coffee drinking ...anemia

N.B: Personal history نقط عليها خلاف تكتب بعد

- | |
|--|
| ♣ Parity in details (P...+..., 4 living, 2 boys, 2girl, the youngest is 4 yrs) |
| ♣ Menstrualher LMP iswhich makes her pregnant atweeks |
| ♣ Personal history of the husband ...name, age, occupation, smoker |

Complaint

♣Some confusing points:

- She will not tell you about stress urinary incontinence (usually associates prolapse), infertility (she is embarrassed محرجه)
- Sometimes the duration is long standing e.g
 - Inability to conceive for 10 years
 - Irregular vaginal bleeding for 6 years
 - Something protruding for 3 years

♣In patients own words (no medical terms) ...onset & duration

- She complains of lower abdominal pain for a week
- She complains of gush of watery discharge 3 days ago
- She complains from recurrent vaginal bleeding for one month
- She complains from decrease fetal kicks for 2 days

♣Sometimes the patient is referred by a doctor

- She is referred due to accidental discovery, during routine antenatal care, of:
 - Elevated blood sugar
 - Elevated blood pressure
 - Fetal anomaly
 - Excess abdominal enlargement
 - Low insertion of the placenta

- ♣ Sometimes the patient has no complaint, she is admitted
- Due to multiple previous fetal loss (bad obstetric history)
 - To control her blood sugar as she is well known diabetic
 - To perform a repeated elective CS

History of present illness: 5 points

Gyne Sheet	Obstetric Sheet
1) Analysis of the C/O 2) Other symptoms: <u>Pain</u> ♣ Location of pain & radiation ♣ OCD + other symptoms ♣ Character (colicky, heaviness, burning, stitching, stabbing, dull aching) ♣ Alleviating & aggravating factors ♣ Timing: - Continuous or intermittent - pre or post menstrual ♣ Environmental & psychological factors ♣ Severity of pain ▪ It is classified into 6Ds - Dysmenorrhea - Dyspareunia - Dysuria - Dyschasia - Deep chronic pelvic pain (pelvic congestion /increase PG) - Dorsal pain - backache – (affection of uterosacral ligaments) - Acute abdomen *pain +infertility +bleeding =endometriosis *pain +vaginal swelling +discharge =prolapse *pain +fever +off discharge =PID, <u>Bleeding</u> ♣ OCD ♣ Apparent cause as psychological, IUD, period of amenorrhea ♣ Amount, color, clots, relation to coi-	1) LMP (Last Menstrual Period) أول يوم في آخر دورة GA (Gestational Age) حامل في اد ايه EDD (Expected Date of Delivery) حتولد أمتى ➤ The patient is pregnant now at ...weeks ➤ She knew that she is pregnant after missing a period, pregnancy test was done in (urine, blood) which was +ve on .././.. ➤ Then the patient started to experience symptoms of early pregnancy (as nausea, vomiting, frequency of micturition, breast heaviness) ➤ Then the patient started regular ANC in which routine investigation were done as ♣ HB % ...blood group &RH (which was +ve) ♣ Blood sugar level ♣ urine analysis - Or the patient did not have regular antenatal visits ➤ Then the patient started to notice gradual enlargement of her abdomen &she started to feel her fetal kicks (quickening) at ♣ MG...16-18 weeks ♣ PG....18-20 weeks ♣ And fetal kicks are still satisfactory till today (normal for her experience or more than 10 /day

tus, menses & associated symptoms.

♣ **It is classified according to**

- cyclicity (cyclic or acyclic)
- Age (DUB at extremities of age)
- Etiology (organic, functional)
- Character (menorrhagia, metrorrhagia, polymenorrhea, contact)
- Pattern :withdrawal, breakthrough

Mass

(abdominal or vaginal)

- pelviabdominal swelling (fibroid, ovarian tumor) are differentiated by: lower margin, mobility, central or lateral, movement of the cervix
- pregnancy

A menorrhea

Genital endocrinology: hypothalamic, pit, ovarian, thyroid, adrenal, DM

General causes: drugs, debilitating diseases as chronic renal failure

Increased ICT: headache, blurring

Infertility

- **Ovarian diseases** as PCOD, galactorrhea, premenstrual spotting
- **Tubal disease** : Surgery, PID
- **Uterine diseases:** previous D&C, myomectomy
- **Cervical diseases:** discharge, backache
- **Physiological:** suckling, stress
- **Drugs**

Others

Pruritis vulvae, incontinence, hirsutism (adrenal or ovarian), Discharge (amount, color, consistency, odor, associated itching).

2) Trimesters

1st Trimester

▪ **Hyperemesis Gravidarum**

♣ القئ المستعصي
♣ كان عندك ترجيع اثر على صحتك واتحجرتي في المستشفى

▪ **UTI (upper or lower)**

كان عندك التهاب بالمسالك البولية، ألم أسفل البطن، ألم بالظهر، حرقان بالبول، سخونة، رعشة، ترجيع

▪ **Threatened Abortion**

ألم بالبطن مع نزيف مهبلي

▪ **Vaginal Discharge**

افرازات غير طبيعية رائحتها وحشة أو لونها غريب (صفراء، زرقاء، خضراء)

2nd Trimester:

- **Medical disorders:** DM, HTN (Headache, Blurring of vision, Epigastric pain, swelling of upper & lower limbs), renal diseases, Cardiac diseases.

عندك سكر أو ضغط (مع زلال) أو الكلى أو القلب

3rd Trimester: (5) خماسي

▪ **Vaginal bleeding**

هل عندك نزيف مهبلي

▪ **ROM**

مياه زي مياه الحنفية اندفقت عليكى وغرقت الأرض ورجليكى

▪ **Abdominal pain**

بيجيك طلق، ألم بالبطن

▪ **Passage of show**

نزلت منك كلكوعه مخاط وعليها دم بسيط

▪ **Fetal Kicks** → 80% felt by the mother

لعب الطفل بتحسي بيه وكويس ولا مش كويس

▪ **Any other symptoms**

اي اعراض اخري

3) Investigations أي فحوصات عملتها ممكن نقوليلي عليها

4) Treatment & admission خدتي اي علاجات أثناء الحمل (هي آيه والجرعة وآيه)

5) Other organs

Analysis of **abnormal** vaginal discharge

Whitish	-True leucorrhea -Monilia	Yellowish (greenish)	TV Bacterial vaginosis
Mucoid	Vaginal adenosis Cervicitis	Serous (watery)	-ROM -Urinary fistula
Muco-purulent	Mixed vaginitis Bartholinitis	Purulent	-Endometriosis, pyometra -PID, pelvic abscess
Sanguineous	Foreign body Vaginal ulcer, senile vaginitis Cx: polyps, ulcers cancer	Offensive	-Trauma:retained FB -Infection: P.sepsis, septic abortion, pyometra -Neoplasm, fistula

Menstrual History ثلاثيات X ثلاثيات

LMP (Last Menstrual Period) أول يوم في آخر دورة

❖ Importance:

- ❖ To exclude pregnancy
- ❖ Calculation of the expected date of delivery if pregnant
- ❖ **Most gynecological operations** are done postmenstrual to avoid the premenstrual pelvic congestion & decrease blood loss at surgery
- ❖ **Some gynecologic operations** are done premenstrual especially those to detect ovulation as premenstrual endometrial biopsy

Menarche

أمتى جائتك الدورة أول مرة

- ❖ In obstetrics, no need to ask about menarche.

Regularity

منتظمة و لا لا

- ❖ Many women describe their cycles to be irregular if menstruation occurs 2-3 days before or after the expected day of the menses.
- ❖ In fact, the cycle is considered regular if menstruation occurred within one week before or after the expected time (± 7 days)

Cycle (N: 3-5 weeks)

بتجيك كل أد آيه

- ❖ If less than 21 days = polymenorrhea
- ❖ If more than 35 days = oligomenorrhea

Duration (N: 3-5 days)

بتقعد أد آيه

- ❖ If lasts 7 days or more = hypermenorrhea
- ❖ If lasts for 2 days or less = hypomenorrhea

Amount (N: 20-50 ml)

كميتها أد آيه

- ❖ Scanty
- ❖ Heavy if > 80 ml
 - > 1 week
 - + Blood clots
 - $>$ Usual amount of the patient

Associated symptoms

- ♣ **Pain:** dysmenorrhea; spasmodic or congestive

هل الألم ساعة الدورة بس ولا قبلها واثناها وبعدها

- ♣ **Associated bleeding:** Pre-menstrual, post-menstrual, inter-menstrual (Menorrhagia) كويس وحش or Mid-cyclic

- ♣ **Discharge:** Mid-cyclic vaginal discharge هایل

The importance of midcyclic triad (intermenstrual pain, bleeding & discharge) is that symptoms are suggestive of ovulation.

There are two main types of dysmenorrheal

	1ry spasmodic dysmenorrhea	2ry congestive dysmenorrhea
Type of patient	Young, virgins & nullipara	Later in life (around 35 years)
Etiology	Theories (↑PG, obstructive theory, hypoplastic uterus, disturbed uterine polarity, sensitivity of nerves, psychological, emotional & environmental factors). It occurs in ovulatory cycles.	Due to pelvic pathology, sedentary life, prolapsed, RVF and infections
Onset	With onset of menstruation	3-4 days before menstruation
Peak	At 1 st day	Just before menstruation
End	With maximum flow at second day	With onset of menstruation
Pain	Colicky	Dull aching
Site	Lower abdomen,	Lower abdominal
Radiation	back & inner thighs	To the back
treatment	Ends by delivery Anti PG Suppression of ovulation	Treatment of the cause & decongestant

Assessment of fetal maturity

1. Clinical estimation of the gestational age

❖ History:

- ⇒ **From the date of last menstrual period = Menstrual labor interval = 40 weeks, 10 lunar months, 9 calendar months + 7 days or 280 days.**
- ⇒ **Date of Quickening = 16 -18 wks in MP, 18 -20 wks in PG.**
- ⇒ **Fertilization labor interval: (IVF):266 days**

Naegele's rule: E D D = LMP + 9 months + 7 days



❖ **Examination:**

⇒ **Fundal level** =

- ✓ 12 wks at symphysis pubis
- ✓ 24 wks at upper margin of umbilicus
- ✓ 36 wks at Xiphisternum

⇒ **S.F.H:**

McDonald formula: SFH in cm $\times$ 8/7 = GA in wks

- ⇒ **Abdominal girth at umbilicus:** 36 inches at 36 wks, 40 inches at 40 wks
- ⇒ **F.H.S:** First heard by **Pinard** at 20 wks.
- ⇒ **P/V** in early pregnancy, **Engagement** in late pregnancy

II- Investigations

1. U/S:

- ⇒ **Crown-Rump length** in 1st 12 wks.
- ⇒ **BPD** from 12 wks, accurate till 24wks.
- ⇒ **Late Femur length, BPD, AC, CC** to estimate GA.

2. Amniocentesis:

- ❖ For fetal maturity [GA, Organ maturity]

3. X-Ray [not used].

N.B. Pharmacological enhancement of maturity

- **Corticosteroids** (see PTL)
- **Surfactant therapy** → after delivery (into the Endo-Tracheal Tube)

Obstetric History تسعة

Pregnancy		Abortion
1. Date متى prolonged period of 2 nd infertility Year of birth: rapid successionliability to malnutrition		
2. Place أين: previous uncomplicated home deliveries ...reassuring		
7 th , 8 th or 9 th month suspect maternal or uterine disease	3. Maturity	▪ 1st Trimester ▪ 2nd Trimester
4. Clinical picture		
▪ Spontaneous or induced لوحده ولا اضطروا يولدوكي أو يسقطوكي ▪ Operative or not هل عمليتي عملية تنظيف بعد الكحت – هل ولدت طبيعي ولا بشفاط أو ولا قيصرية ♣ Easy vaginal deliveryexpect another ♣ If previous complicatedplan for possible cesarean section ♣ Forceps or ventose ...suspected CPD ♣ Cesarean section ...why		
5. Outcome:		
▪ Maternal: post- partum hemorrhage, fever , DVT, jaundice ▪ Fetal: live or dead, jaundiced or cyanosed, Breast fed & malformations		

6. Contraception

- ❖ Name the methods & their duration
- ❖ When removed before this pregnancy
- ❖ Were cycles regular at that period or not?
- ❖ The last method: why stopped d.t complications or to get pregnant

7. Sex: ♂ or ♀ (x-linked diseases)

8. Weight → average, above or below

9. Antenatal

- ❖ repeated hypertension ...expect recurrence
- ❖ Previous DM screen for DM
- ❖ Previous ante-partum hemorrhage for PROM ...may recur
- ❖ PROM هل كان عندك أي مرض أثناء الحمل: ضغط ، سكر أو

All informations are written in a table

no	Date	Place	Time	Weight	Sex	Ante-natal period	Mode of termination	outcome	Lactation & contra- ception

Past History

- Medical: قلب - ضغط - صدر - سكر - كلي - هرمونات - علاجات
- Surgical: عمليات (أمتى و فين و ليه و المضاعفات)
- Allergy + blood transfusion

Family History

- سكر - ضغط - أورام - تشوهات - توائم

LMP=the 1st day of the last menstrual period

Criteria for reliable date:

- 1-the patient must be sure of date
- 2-the menses must be regular
- 3-the last menstrual cycle is of average amount and duration
- 4-no abnormal contraception or lactation at least 3 months before the LMP

Expected date of delivery (EDD)

According to Naegele's rule: LMP+ 7days +9months

Gestational age

The duration of pregnancy in weeks (every 3 months=13weeks)

Obstetric history summary

- Parity (pa+b)
- Number of living children
- Number of males & females
- Last delivery & last abortion
- Any operative intervention

Parity

= number of deliveries

Expressed as (Pa+b)

❖ a= deliveries(termination of pregnancy after 28 weeks (من اول السابع

❖ b= abortions (termination of pregnancy before 28 weeks (قبل السابع).

Gravidity

= number of pregnancies including deliveries and abortions

Expressed as (Ga+b+l Pa)

a = deliveries (termination of pregnancy after 28 weeks)

b= abortions (termination of pregnancy before 28 weeks).

Obstetric code (4 digit code TPAL system)

Expressed as (A B C D)

A= full term deliveries

B= preterm deliveries

C= abortions

D= living children

Diagnosis

Obstetric diagnosis	Gynecological diagnosis
<i>Name, age, Parity</i>	
Gestational age in weeks	
Presentation & Position	
In labor or not	
Abnormality	
Possible etiology	
Association or complications	
For further examination and investigation	

History taking (issue brief)

6 points

1- Personal history: (7 points)

Name- age- address- occupation- marital status- parity- special habits

2- Complaint & History of present illness (5 points)

<u>Gynecologic sheet</u>	<u>Obstetric sheet</u>
1. analysis of the complaint	LMP-EDD-GA
2. Other symptoms: pain - bleedind - discharge - masses - infertility - amenorrhea - incontinence - pruritis vulvae	<u>Trimesters:</u> 1st: threatened abortion, hyper-emesis gravidarum, UTI, abnormal discharge 2nd: medical disorders 3rd: (5) pain, bleeding, ROM, show, fetal kicks
3. Investigations	
4. Treatment	
5. Other systems	

3- Menstrual history (3x3)

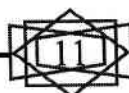
<u>menarche</u>	<u>Cycle</u>	<u>Ass. Pain</u>
<u>LMP</u>	<u>Duration</u>	<u>Ass. Bleeding</u>
<u>Regularity</u>	<u>Amount</u>	<u>Ass. Discharge</u>

4- Obstetric history (9 points)

no	Date	Place	Time	Weight	Sex	Ante-natal period	Mode of termination	outcome	Lactation & contra- ception

5- Past history (as usual)

6- Family history (as usual)



Obstetric examination

1- General examination

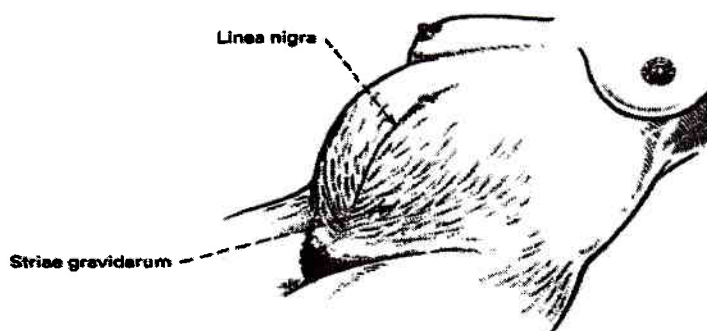
- ♣ Stand on the right side
- ♣ **General data:** Height, weight & gait.
- ♣ Vital signs: Pulse, BP, temperature & respiratory rate.
- ♣ **The head:** eye for, jaundice & edema of the lids.
- ♣ Pallor, cyanosis, hirsutism, pigmentations & septic foci.
- ♣ **The neck for goiter enlarged TN & congested neck veins.**
- ♣ **Chest & heart examination.**
- ♣ **Breast examination** for signs of pregnancy & any abnormalities.
- ♣ **Limb examination** for edema, varicose veins & deformities.
- ♣ **Back examination,** for any deformity.
- ♣ **General debilitating disease:** thyroid, DM, cardiac

3. Abdominal examination

a. Inspection:

- ♣ The size of abdomen & pendulous abdomen is detected in the standing position.
- ♣ In case of transverse lie the abdomen is transverse from side to side.
- ♣ A transverse groove e.g. in occipito-posterior and Mentoposterior.
- ♣ Fetal limb movements.
- ♣ Scars as a cesarean section scar, Striae gravidarum & pigmentations as linea nigra.
- ♣ Masses as hernia.

Striae gravidarum are depressed streaks on the skin of the fat areas — abdomen, breasts and thighs. After delivery they regress and persist as striae albicantes. They are due to stretching, but may also be associated with increased secretion of ACTH affecting connective tissues.



b. Palpation:

- ♣ Superficial palpation, for tenderness & rigidity.
- ♣ Deep palpation to examine the abdominal organs.
- ♣ Obstetric palpation includes;

a. Fundal level:

- ☛ By the ulnar border of the left hand starting at the xiphisternum after centralizing the uterus to correct the dextro-rotation.

☛ After engagement. The fundal level descends to the level of 32 weeks.

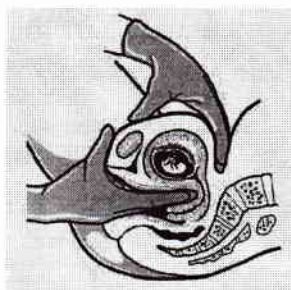
☛ The differences between 32 weeks and term i.e.” 38-42 “Weeks:

- The period of amenorrhea suggests the gestational age.*
- lightening & pelvic pressure symptoms suggests a term fetus*
- Engagement of the head suggests a term fetus.*
- The size of the fetus & the fundus of the uterus (broad at 40 w) help*

causes of oversized uterus	causes of undersized uterus
Mis-calculation	Mis-calculation
Polyhydramnios	Oligohydramnios
Twins	Transverse lie
Vesicular mole	Missed abortion and IUFD
Macrosomia or hydrocephalus	IUGR, Anencephaly
Associated fibroid	

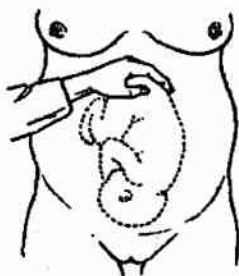
4. Causes of non engagement of head in PG

Fetal	Maternal
- Large head ,hydrocephalus - Malposition ,malpresentation - Multiple pregnancy - Short cord - Polyhydramnios	- Contracted pelvis - Tumor in pelvis - Placenta previa - Full bladder or rectum - No cause may be found

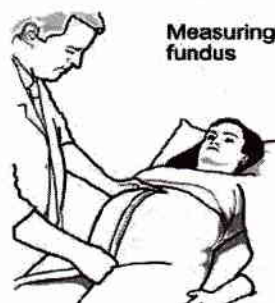


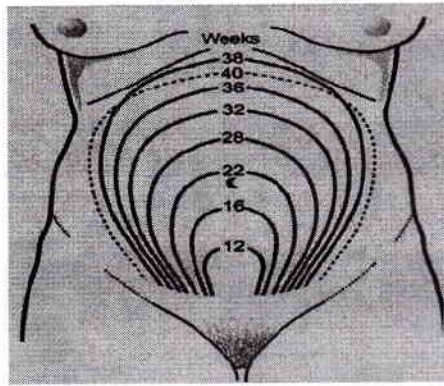
Hegar's sign

1. Is the **FUNDAL HEIGHT** consistent with the estimation of maturity?



The height of the fundus in centimetres should equal approximately the weeks of gestation.





b. Obstetric palpation "maneuvers of Leopold"

The fundal grip

- ❖ The fundus of the uterus is palpated by both hands to detect the part of the fetus occupying the fundus i.e the head in 3.5% or the breech in 96%.

Lateral umbilical grip

- ❖ The uterus is fixed with by 1 hand at the level of the umbilicus while both hands are alternated: for the back, which is felt smooth firm & convex. The limbs which are felt as mobile knobs. While in transverse lie the head is felt on one side & the breech on the other.

1st pelvic grip "Pawlick grip":

- ❖ The hand is placed on the symphysis pubis with the thumb parallel to one inguinal ligament & the 4 fingers parallel to the other. It is done for:
 - Detection of the parts of the fetus occupying the lower part of the uterus.
 - Detection of engagement if less than 2/5 of the head is felt.

PALPABLE FETAL PARTS

Fetal parts, such as the head and limbs, begin to be felt from around 26 weeks.

2nd pelvic grip



1. The fundus is palpated and its contents (here the breech) identified.

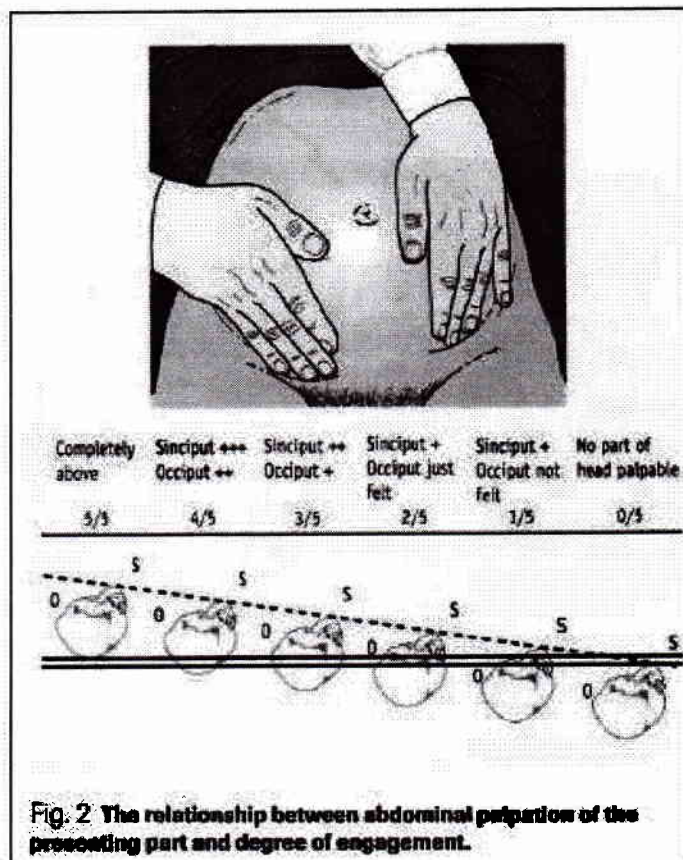


2. The hands palpate the contours of the uterus, identifying the back and the limbs.



3. The head should be palpated, and it should be noted whether it is mobile or fixed in the pelvic brim.

- ❖ Facing the patient's feet both hands are pushed towards the pelvis:
 1. To detect the degree of flexion of the head.
 2. To detect the engaged head of an unsuspected twin.

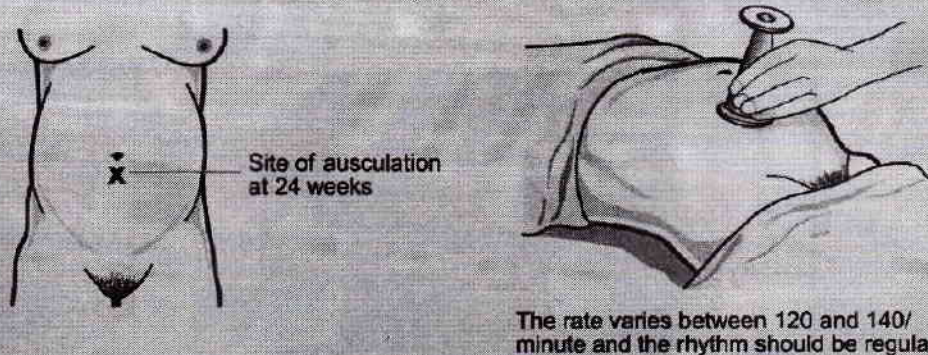


c. Auscultation of the fetal heart sound (FHS):

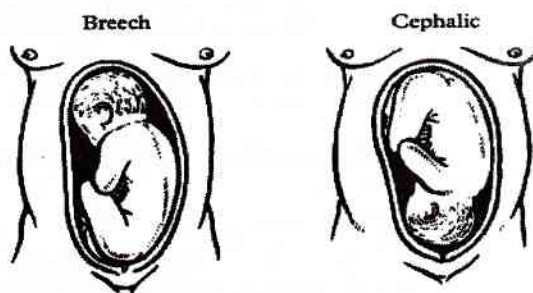
- FHS is heard by the Pinard stethoscope (20 weeks gestation) or the Sonicaid (10th week gestation).
- Normally the fetal heart rate is between 120-160 b/m, regular, tic tac rhythm.
- The point of maximum intensity of the FHS is heard through the anterior scapula & is determined by the fetal position e.g.
 - **In occipito-anterior**, FHS is heard midway between the umbilicus & the anterior superior iliac spine
 - **In occipito posterior (OP)**, FHS are heard below the umbilicus in the flank i.e. lateral to the site of occipito- anterior.
 - **In breech presentation**, FHS are heard above the umbilicus.
 - **In transverse lie**, on one side of the umbilicus towards the head.

AUSCULTATION OF THE FETAL HEART

The fetal heart may be heard with a fetal stethoscope (Pinard) pressed on the abdomen, over the back of the fetus, from about 24–26 weeks.



3. What is the **PRESENTATION**?
The presenting part is that part of the fetus which occupies the lower pole of the uterus. Only a cephalic presentation is normal after 32 weeks. At 30 weeks, however, up to 25% of babies present by the breech.



Values of auscultations of FHS مهمه:

- 1) It is a sure sign of pregnancy اول حاجه تتقال.
- 2) It gives an idea of the fetal position & presentation.
- 3) Diagnosis of intrauterine fetal death.
- 4) Diagnosis of fetal distress e.g. bradycardia.
- 5) Diagnosis of twins.

Differential diagnosis of the FHS:

1. Uterine soufflé:

- It is a soft blowing sound coinciding with the maternal pulse.
- It is due to increased blood flow in the dilated maternal uterine vessels.

2. Umbilical (funic) soufflé:

- It is a sharp whistling rapid sound coinciding with the fetal pulse.
- It is due to blood flow in the umbilical vessels.

3. Sounds of fetal movements.

4. Aortic pulsations.

5. Intestinal sounds.

5. Vaginal examination

Indications of vaginal examination:

1. Any complications during pregnancy e.g. bleeding or discharge.
2. At the 36th weeks to do cephalopelvic disproportion tests if the head is not engaged in a primigravida.
3. during labor: see management of normal labor.

Gynecological Examination

1. General examination

♣ As obstetric sheet.

♣ Values:

- ❖ Fitness of surgery: general debilitating disease e.g thyroid, DM, cardiac.
- ❖ Association: cancer corpus triad, uremia in cancer cervix.
- ❖ Signs of metastasis: cachexia, Virchow LN, LL edema.
- ❖ Endocrinological signs:
 - ♠ Syndromes ...tall, short, obese, thin.
 - ♠ Galactorrheahyperprolactinemia.
 - ♠ Hirsutism ...hyperandrogenism.

2. Abdominal examination

- ♠ Slight flexion of the knees are needed to relax the abdomen.
- ♠ Palpate the body structures using the proximal & middle phalanges of the fingers. The palm of the hand is too insensitive to detect subtle changes in texture. The fingertips are too sensitive but may squeeze body tissues and induce tenderness.
- ♠ The abdomen is divided into nine quadrants (regions) by two vertical & horizontal lines.
- ♠ The vertical lines are the midclavicular lines.
- ♠ Extending from the midclavicular points to the midinguinal points.
- ♠ The first horizontal line is the transpyloric plane, which bisects the distance between the umbilicus and the xiphisternum (at the level of L1 vertebra).
- ♠ The 2nd horizontal line is the intercrestal, which extend between the highest points of iliac crests.

a. Inspection

- ♣ Contour for localized or generalized swellings.
- ♣ Scars for the site. Type of healing, pigmentation & incisional hernia.
- ♣ Pigmentations & dilated veins.
- ♣ Hernia & Hirsutism.

b. Palpation

Superficial palpation:-

- ♠ For the 9 regions of the abdomen to detect tenderness, rigidity & masses

Deep palpation

- ♠ To examine the abdominal organs e.g. the liver, kidney & spleen.
- ♠ To examine masses:
 - ❖ Site, size & number.
 - ❖ The surface: Smooth. Irregular or lobulated.
 - ❖ The edge: Well defined or ill-defined.
 - ❖ Consistency.
 - ❖ Mobility, from side to side & from above downwards.
 - ❖ Tenderness.

c. Percussion

- ♣ To differentiate masses from ascites (see ovarian tumors).

d. Auscultation

- ♣ For any mass e.g. fibroid & to exclude pregnancy.

3. Vaginal examination

- It should be done in good light and the presence of a third person.
- There are four positions for pelvic examination
 - ☛ **Dorsal position:** the patient is placed on her back with her knees flexed; it doesn't allow good visualization of the vulva or introduction of a speculum

The dorsal position is most convenient for patient and doctor although some prefer the patient to be in the lateral position. During palpation, the condition of the labia, clitoris, anus and surrounding skin should be noted. Thus excoriation suggests irritant discharge and pruritus; purplish discoloration might be a sign of diabetes. Skin conditions, such as eczema, may occur on the vulva. Excessive use of lubricants on gloves should be avoided.



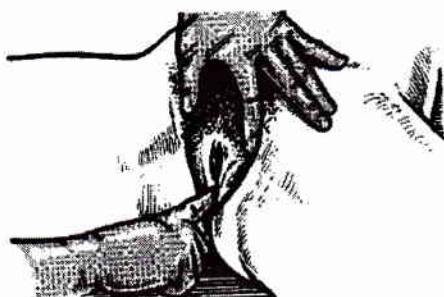
- ☛ **Lithotomy position:** the patient lies on her back, the buttocks drawn to the edge of the examination table and the thigh abducted and flexed on the abdomen and kept in position by support.
- ☛ **Lateral position:** she lies on her left side and draws up both knees; it is a comfortable position and doesn't expose the patient markedly
- ☛ **Sim's position (left lateral semiprone):** the patient lies on the lt side with the right thigh & knee flexed while the left thigh & knee remains extended. The pelvis is raised so the intestine are displaced from the pelvis floor & air distends the vagina

a. Inspection

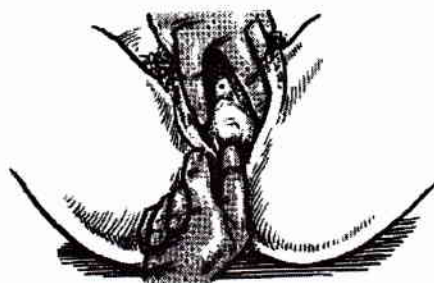
1. The vulva: for masses, ulcers or discoloration.
2. The patient is asked to cough to detect stress incontinence.
3. In case of prolapse, the type of prolapse & anatomical changes are noted.

b. Digital palpation:

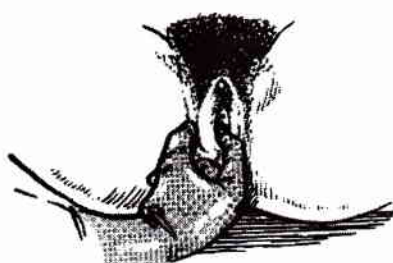
- The labia are separated by the index & thumb of the left hand. A lubricated Sterile gloved one or 2 fingers of the right hand are introduced in the vagina.
- To examine the vaginal walls & fornices.
- To examine the cervix.
- To palpate Bartholin gland this is normally not felt unless diseased.
- The urethra is milked from above downwards to detect any discharge
- In case of prolapse the tone of the levator is denoted.



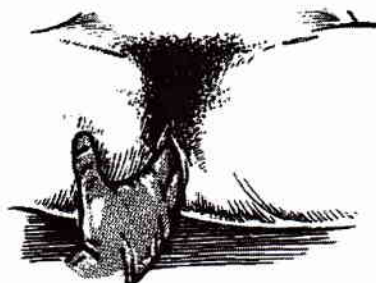
1. A single finger presses on the perineum, avoiding the sensitive vestibule, and accustoming the patient to the examiner's touch.



2. Urethral meatus and vestibule are exposed. Pressure from the finger will squeeze any pus from the peri-urethral glands.



3. Bartholin's gland is palpated (on both sides). It is difficult to feel the normal gland.



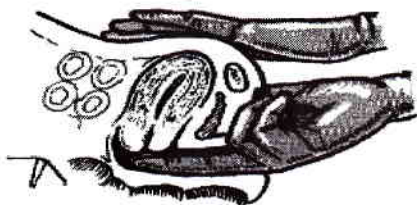
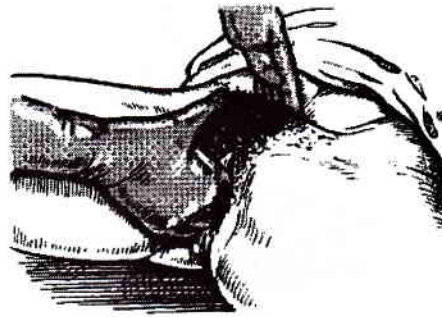
4. If there is room, a second finger is inserted and the perineal floor is palpated by stretching.

4. Bimanual examination

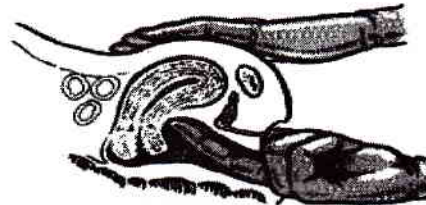
- ☛ To examine the uterus: The index & middle fingers of the right hand are placed in the anterior vaginal fornix while the left hand is placed on the lower abdomen to examine the uterus for:
 - Size, position, consistency, mobility & tenderness.
 - Palpation of the posterior fornix for RVF uterus & Douglas pouch.
 - To examine the adnexa (the ovaries & tubes): The index & middle fingers are placed on the lateral fornix & the abdominal hand lateral to the uterus. Normally the tube isn't felt & the normal ovary **may be** واخذ بالك felt in a thin patients.
 - To examine masses in the broad ligament or in Douglas pouch.

This technique needs practice. Formal consent is essential before examination of a patient by a student. The external hand is the more important and supplies more information. It is customary to use two fingers in the vagina, but an adequate outpatient examination may be made with only one finger. Very little information is gained if the patient finds the examination painful. In a virgin or a child only rectal examination should be carried out.

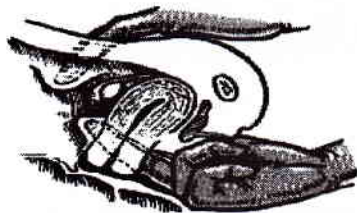
Pelvic models are available, with interchangeable uterine and adnexal components to simulate normal and pathological conditions, for practice examination.



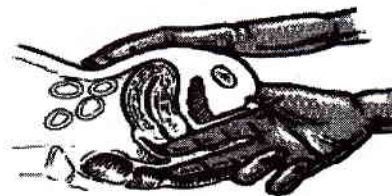
1. The cervix is palpated and any hardness or irregularity noted.



2. The whole uterus is identified, and size, shape, position, mobility and tenderness are noted.



3. The lateral pelvis is palpated and any swelling noted. Normal adnexa are difficult to feel unless the ovary contains a corpus luteum.



4. Sometimes rectovaginal examination is helpful, if the vagina admits only one finger or if the rectovaginal septum is to be examined.

5. Speculum examination

- A lubricated Cusco speculum is commonly used with adequate light.
- Types:

☛ Cusco & Grave's (bivalve) speculum

- ❖ 2limbs joined at the handle.
- ❖ Various sizes plastic or metal.

☛ Sim's one limb:

- ❖ Not self retained hold it by the hand.
- ❖ To see better the posterior vaginal wall in Sim's position.

Methods:

- ❖ Gently separates the labia.
- ❖ Adequate light.
- ❖ Lubricate the speculum
- ❖ Better introduced while closed
- ❖ Advance it in a backward direction against the post vaginal wall
- ❖ Rotate it to bring the blades in the antero-posterior position & open

Removal:

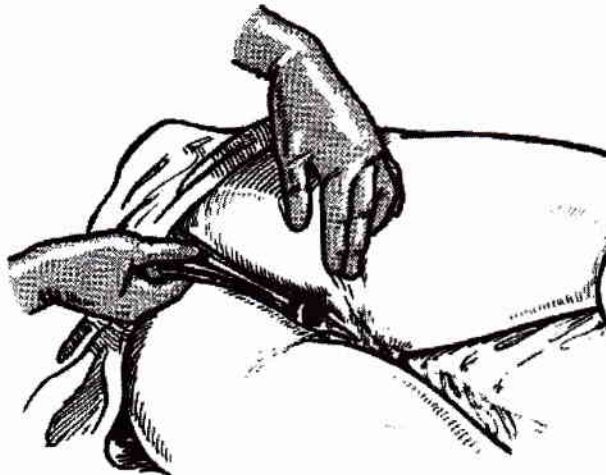
- ❖ Open the screw close the blades
- ❖ Rotate the blades withdraw gradually

Value:

- ♣ Inspect the vaginacysts or ulcers
- ♣ Inspect the cervix: if suspicious (ulcers, nodules), ectopy
- ♣ Smear for cytology
- ♣ Swab for culture
- ♣ This is done by inspect the cervix & vaginal walls.



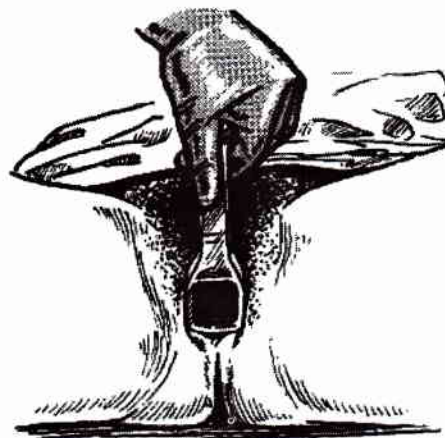
SIMS' SPECULUM (the duckbill speculum) is designed to hold back the posterior vaginal wall so that air enters the vagina, due to negative intra-abdominal pressure, and the anterior wall and cervix are exposed.



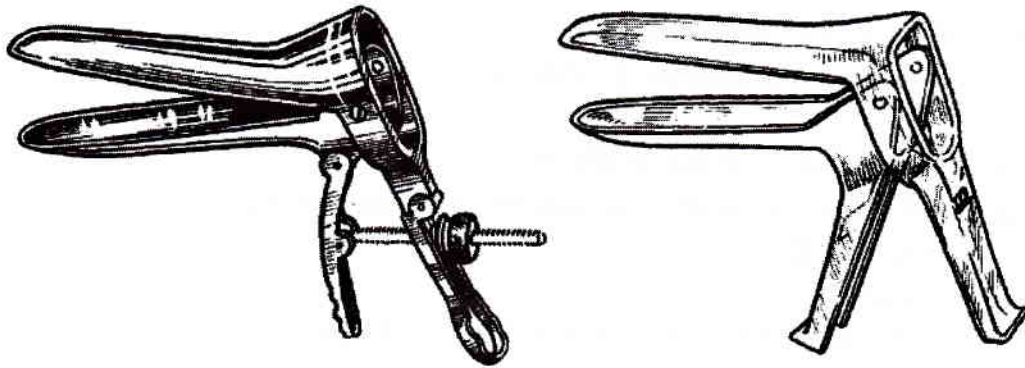
In this picture the patient is in Sims' position (semi-prone) which is useful if the anterior wall is to be studied (e.g. if fistula is suspected).



1. The speculum is applied to the vulva at an angle of 45 degrees from the vertical. This allows the easiest insertion.



2. When fully inserted it is gently opened out and held in position with the cervix between the blades. A good light is needed for inspection.



The bi-valve speculum is the most useful (Cusco's pattern is shown here). It is made either of steel or perspex (disposable) and is designed to open after insertion so that the cervix can be seen and a cytological smear or bacteriological swab taken as required. The steel speculum has a screw for maintaining it in the open position. Plastic specula are available with a ratchet device for the same purpose. Excessive amounts of lubricant should be avoided.

6. Indications of PR in gynecology

1. Genital cancer specially cancer cervix.
2. In virgins e.g. imperforate hymen.
3. For rectocele & enterocele combined rectovaginal examination is done.
4. In complete perineal tear & rectovaginal fistula.
5. If masses felt in Douglas pouch.
6. Rectal problems e.g. bleeding per rectum.

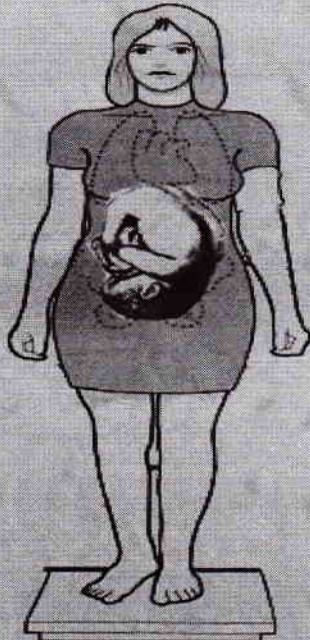
7. Combined recto-vaginal

- ⇒ The middle finger in the rectum while the index in the vagina for endometriosis nodularity, tenderness
- ⇒ Prolapse: differentiate rectocele from enterocele (Malpus test)

DM with pregnancy (Issue brief)

Causes:

- Gestational
- Pregestational
- (OCD)



Symptoms:

- Polyuria
- Polydipsia
- Polyphagia
- loss of weight

Complications:

- PET
- PHA
- Preterm labor
- Infections
- Fetal affection

Investigations:

- Glucose level
- Fundus examination
- Fetal well-being



Treatment:

- Insulin therapy
- Any other medications



Diabetes Mellitus with Pregnancy

لو كانت الحالة

- ♠ She is pregnant in her 8th month, coming for ANC as she's DM with pregnancy

Cause

OCD

أمتى بدأ معاكي ، في الحمل ده ولا قبله

C/P

Polyuria, polydipsia, polyphagia & loss of weight

هل عندك زيادة في عدد مرات التبول وبتعطشي كتير وبتجوعي كتير ومع كده بتخسي

Complications

PET, neurological, PHA, preterm labor, infections & fetal affection

هل الضغط ارتفع عندك مع زلال – هل أيديكي ورجليكي بتتمل – هل بتحسي أن بطنك زادت في الحجم أكثر من المعتاد - هل بتحسي بطلق – هل عندك التهابات مهبلية أو في مجرى البول أو بهرش من تحت – هو لعب الطفل كويس

Investigations

عملتي تحاليل للحمل – السونار هل فيه مشاكل فيه كتير أو العيل مشوه عملتي تحاليل السكر والنتيجة -

Treatment

بتأخدي جرعة الأنسولين أد آيه – نوعه آيه – معكر ولا رايق – كام مرة في اليوم – حصل فيه أي مشاكل وهل السكر متظبط وحتولدي أمتى

Diagnosis

- ♠ Age
- ♠ Parity
- ♠ Weeks
- ♠ Presentation, position
- ♠ In labor or not
- ♠ Association
- ♠ Complications (maternal & fetal)

Diabetes with pregnancy

❖ Personal history

- Nadia Mohamed kamal 36 year old, married for 18 years, P5+0 with 3 males and 2 females, the youngest is 5 year old. She is a housewife & lives in matarya. There are no special habits of medical importance.
- Her husband Mahmoud Ahmed Abdullah, 45 year old, painter, a chronic heavy smoker (25cigarettes/day for 28 years)

❖ Complaint

- She's pregnant in her 7th month, coming for antenatal care as she is known to have diabetes mellitus with pregnancy,

❖ History of present pregnancy

She is pregnant at 32 weeks; her 1st day of the last menstrual period (LMP) was on 3/4/2006. Her expected day of delivery (EDD) will be on 10/1/2007. The patient knew that she is pregnant after missing a period & started to experience symptoms of early pregnancy (1st trimester) in the form of nausea, vomiting, increase frequency of micturition & longing. 10 days later pregnancy test was done in urine which was +ve, and then U/S was done afterwards to confirm the diagnosis.

Her 1st trimester passed smoothly; there was no symptoms of hyperemesis gravidarum, or threatened abortion (vaginal bleeding associated with lower abdominal pain), or lower urinary tract infections (dysuria & suprapubic pain), or upper urinary tract infections (loin pain, rigors, fever, vomiting), or even abnormal vaginal discharge

The patient is a known case of Diabetes Mellitus. The condition started during her 4th pregnancy when she noticed marked abdominal enlargement. She sought medical advice. U /S was done & revealed polyhydramnios. Routine investigations & blood tests for glucose were done & revealed Diabetes. The patient was advised to be controlled on diet but was not sufficient & insulin had to be added in the last few weeks of this pregnancy. After the end of pregnancy the diabetic state disappeared & the patient stopped insulin. During the last pregnancy, the patient was advised to take insulin since her 3rd month. After the end of pregnancy the patient continued to suffer from glucose intolerance. She was then controlled on oral hypoglycemics until the start of the current pregnancy, after which she was shifted to insulin therapy.

The condition was not associated with symptoms of diabetes as polyuria, polyphagia, polydipsia & loss of weight, or even tingling or numbness in upper & lower limbs. There is no history of PE (headache, blurring of vision, epigastric pain or swelling of limbs). No associated symptoms of polyhydramnios (Excessive abdominal enlargement & pressure symptoms).

No history of premature uterine contractions. Few weeks ago the patient complained of whitish discharge for which she sought medical advice. The condition resolved after receiving vaginal creams & douches. Quickening was perceived at 20th week. Since that she feels adequate fetal kicks (20kicks/d). No history of ROM, no history of vaginal bleeding or labor pain or passage of show. The patient had done investigations in the form of blood & urine analysis and US but no available reports. Diabetic control is carried through diet control & insulin therapy; given in 2 doses (biphasic regimen): 1st before breakfast (3/4 cc of Mixtard), & 2nd at 7 pm (1/2 cc of Mixtard). Follow up is done weekly for fasting & 2hrs postprandial blood sugar. Review of other body systems showed no abnormality.

❖ Menstrual history

The first day of the last menstrual period (LMP) was on 3/4/2005. The patient used to have regular menses for 5 days cycling every 30 days average in amount (2 pads/ day) with spasmodic dysmenorrhea. No inter-menstrual pain, bleeding or discharge.

	Date	place	AN pe- riod	maturity	C/P	Out- come	Contra- ception	weight	sex
1	1988	Home	Smooth	Full term	SVD	No compl.	IUD for 1 y	Av.	M
2	1990	Clinic	Smooth	Full term	SVD		OCP for 2 y	Av.	M
3	1993	Clinic	Smooth	Full term	SVD		OCP for 5 y	Av.	F
4	2000	H	DM	38 wk	SVD	Fetus incu- bated due to NN jaundice for 3 days	IUD for 2y	Av.	F
5	2003	H	DM	38 wk	SVD		IUD for 2 y	Av.	M

- ♣ H= hospital.
- ♣ SVD= spontaneous vaginal delivery.
- ♣ OCP= oral contraceptive pills.
- ♣ Av.= average
- ♣ M= male
- ♣ F= female

❖ Past history

Medical No history of medical disorders other than Diabetes Mellitus
No previous surgery except tonsillectomy.
No history of allergy or blood transfusion.

❖ Family history

Both her parents are diabetic & hypertensive No history of consanguinity.
No history of twin pregnancy or congenital fetal malformations.
No history of tumors or TB.

Diagnosis

36 years old, P5+0, 32 wks, not in labor. Diabetic on insulin therapy; class B by Modified White Priscilla Classification admitted for antenatal care & further investigations.

Another example

❖ Personal history

Aziza Amir Sayed is 37 year old, married for 20 years, she is P4 with 2 living male and 1 living female, the youngest is 4 year old, she is a housewife, living in El Giza with no **special** habits of medical importance

❖ Complaint

The patient is pregnant in her 8th month & is referred from the outpatient clinic for control of blood sugar

❖ History of present pregnancy

Regarding her menstrual history, the patient's LMP was on 3/4/2005, the patient used to have regular cycles, she is sure of her date and has no history of recent hormonal contraception, and this makes her pregnant at 32 weeks and makes her EDD on 10/1/2006.

The patient is known to be diabetic for 10 years and was on oral hypoglycemics but she was shifted to insulin therapy since the start of this pregnancy.

Regarding the 1st trimester, it passed smoothly with no history of hyperemesis gravidarum, no history of UTI or history of recurrent vaginal infection, the patient was controlled on insulin mixtard 30 units in the morning and 15 units in the evening.

Regarding the 2nd trimester, the patient began to complain of symptoms of uncontrolled diabetes in the form of polyuria, polydipsia and polyphagia, no change of her body weight was observed, no symptoms suggestive of PE, no history of premature uterine contraction, recurrent vaginal infection or unusual abdominal enlargement, no history of symptoms of retinopathy, nephropathy or heart troubles, the insulin dose was increased but no improvement in her symptoms, U/S was done at 24 weeks and the patient was told that it was normal.

Regarding the 3rd trimester, the patient is still complaining of the symptoms of the uncontrolled diabetes in spite of increasing the insulin dose till it reached 50 units in the morning and 30 units in the evening, no symptoms suggestive of PE, preterm labor or UTI. NO history of nephropathy, retinopathy or heart troubles. The patient was referred from the OPC for control of diabetes and planned hospital delivery.

Regarding her past obstetric history, in year 1980, the patient had a spontaneous vaginal delivery at term, at home giving a living female that was breast fed and there was no history of antenatal or postnatal complications.

In year 1984, the patient had another spontaneous vaginal delivery at term, at El Demerdash hospital giving a living male that was breast fed and there was no history of antenatal or postnatal complications.

In year 1990, the patient had an induced vaginal delivery at 36 weeks because of IUFD at El Demerdash hospital giving a macerated still birth male with no history of postnatal complications.

In year 2000, the patient had an induced vaginal delivery at 38 weeks because of pregestational diabetes at El Demerdash hospital giving a living male that was breast fed and with no history of postnatal complications.

Regarding her past history, the patient was diagnosed to be diabetic in the year 1997 and was prescribed oral hypoglycemics.

No history of other medical troubles or previous surgical interference.

No history of drug allergy or blood transfusion.

QUESTIONS

I- What is the definition of Diabetes?

Chronic metabolic disorder of CHO metabolism (+/- fat and protein metabolism) due to relative or absolute insulin deficiency with limited insulin release in response to CHO challenge or impaired effect of insulin at the cellular level.

2- What are the effects of diabetes on pregnancy?

I. Maternal complications	II. Fetal complications
⇒ During pregnancy	⇒ IUFD (5%)
✓ Abortion, Preterm labor (over distension {Macrosomia, PHA} or due to complications) ✓ Polyhydramnios 33%, (GIT, Renal, open neural tube defects" fetal polyuria & large placenta) (commonest cause is idiopathic), ✓ Abruptio placenta and placenta previa ✓ PET "due to vasculopathy, $\downarrow$PGI2" ✓ Increased incidence of infection (vulvovaginitis & Pyelonephritis)	✓ Due to PET, Abruptio placenta, CFMF or sudden unexplained)
	⇒ IUGR (20%)
	✓ Due to ch. Placental insufficiency"
⇒ During labor and puerperium	⇒ CFMF
✓ Preterm labor ✓ Prolonged and obstructed labor ✓ Postpartum hemorrhage ✓ Puerperal sepsis (due to prolonged labor) ✓ Subinvolution of uterus ✓ Pulmonary complications ✓ Defective lactation	✓ ($\uparrow 3x = 6-9\%$) ✓ Due to $\uparrow$glycemia, $\downarrow$glycemia, hyperketosis ✓ No diagnostic malformation but most common one is CVS then open neural tube defect ✓ Most characteristic → caudal regression \$
	⇒ Macrosomia (40%)
	✓ "Due to hyper glycemia with hyper insulinemia" ✓ fetal weight > 90th percentile "> 4.5 kg in non diabetic & > 4 kg in diabetic" ✓ Complicated by shoulder dystocia

The neonatal complications

1. Cyanosis " $\downarrow$ surfactant" → RDS after 6 – 8 h after delivery "due to $\uparrow$ fetal insulin → inhibition of steroid action on pneumocyte type II"
2. Jaundice → due to Polycythemia, physiological, prematurity, cephalhematoma & oxytocin". Ttt: phototherapy or exchange transfusion.
3. Polycythemia (33%) due to $\uparrow$ EPO by chronic intrauterine hypoxia & hyperviscosity \$ → Renal & mesenteric VT
4. Birth injuries
5. Hypoglycemia 25 – 40% (ttt: IV glucose 10%) & hypothermia.
6. Hypocalcaemia & tetany "by $\uparrow$ catabolism of the NN" (ttt: IV calcium gluconate)
7. Hypomagnesaemia "due to functional hypo-thyroidism"
8. Inheritance of DM, Cardiomyopathy
9. $\uparrow$ PNMR (4-10%) due to CFMF (40%), Prematurity & other complications

3- How can you diagnose a diabetic case?

- ❖ **History:** (Symptoms of DM +/- Complications - Obstetric history - Past history - Family history)
- ❖ **Universal Screening for DM by ACOG:** as 50% of women with gestational DM lack specific risk factors

High risk group	Low risk group
- History of gestational DM Or congenital fetal malformations or current macrosomia from pregnancy or unexplained stillbirth or idiopathic polyhydramnios Maternal age > 35 years Maternal obesity > 120% of ideal body weight, +ve family history of overt DM	- No previous abnormal glucose tolerance test - No other risk factors apart from pregnancy.
- Timing: Early screening at the 1st Antenatal visit, if normal results repeat at 24 th – 28 th wk	- Timing of screening: 24-28 weeks.

The screening tests

- ♣ **1Hr post-prandial screening test (O' Sullivan test. Glucose challenge test (GCT) or 50 gm Glucola test)**
 - ✓ The most accurate and the most specific
 - ✓ If 1 hr post-prandial test is < 140 mg / dl = no further testing or treatment as it is a normal result
 - ✓ If 1 hr post-prandial test is > 140 mg/dl = Require confirmatory test (3 hrs glucose tolerance test)
- ♣ **Glucose in urine "Glucosuria"**
 - ✓ Worst screening test
 - ✓ D.D. of Glucosuria during pregnancy:
 1. Renal Glucosuria
 2. Alimentary Glucosuria
 3. Lactosuria
 4. DM
 5. Vit C & Salicylates therapy
- ♣ **2Hrs post-prandial blood glucose level (+ve if > 120 mg/dl)**
- ♣ **Random blood sugar (+ve if > 200mg/dl)**

The confirmatory test (3 - hrs Glucose tolerance test 'GTT')

Method:

- ☛ Daily diet of 150 gm glucose for 3 days before the test.
- ☛ Overnight fasting for 8 - 14 hrs with No smoking.
- ☛ Detect a fasting blood sugar level.
- ☛ Administrate 50 gm "UK" or 75 gm "WHO" or 100gm "USA" glucose in at least 400 ml water, then detect blood sugar level every hour for three hours.

Interpretations:

	Normal Curve		Renal Glu- cosuria	Alimentary Glucosuria	DM
	Blood	Plasma			
FBS	<90	<105	Normal	Normal	Abn 2 readings = DM A1= Normal FBS A2= Elevated FBS
	<165	<190	Normal	>180 mg%	
	<145	<165	Normal	Normal	
	<125	<145	Normal	Normal	
Urine glu- cose	-ve	-ve	Only +ve at peak	+ve at 1 hr peak	+ve if > renal glucose tolerance

5- What is the pre-conceptional management of diabetic female wants to get pregnant?

- ❖ HbA1c (Glycosylated Hb):
 - ☛ If HbA1c is > 10%, post-pone the pregnancy because of increased risk of congenital malformations
 - ☛ Used in monitoring the glycemic control during the preceding 4 - 8 wks
- ❖ Detect any Complications
- ❖ Shift the oral hypoglycemic to Insulin because of
 - ☛ Teratogenicity during 1st 8 wks
 - ☛ Severe hypoglycemia due to increased fetal hyperinsulinemia
 - ☛ Difficulty in controlling DM during pregnancy

6- What is the antenatal management of a diabetic case?

- ☛ **Counseling for Class B-T** regarding fetal risk for therapeutic abortions in nephropathy (Kimmelstiel Wilson Syndrome), Retinopathy, Ischemic heart disease and congenital fetal malformations that are incompatible with life.

☛ **Exercise**

☛ **Ante-natal management**

- ⇒ **Start with diet control** of caloric intake 1800 – 2400 Kcal / d (30 cal/kg/d ± 300 cal in 3rd trimester) in the form of 20% proteins, 50% complex CHO, and 30% Poly-saturated fat Distributed as 25% breakfast, 30% lunch, 30% dinner, and 15% mid-morning, mid-afternoon, and bed time snacks + ↑ vit B12 & Minerals (Zinc & Chromium). □ □
- ⇒ **Insulin therapy**
 - ✓ **Class A1:** Diet control
 - ✓ **Class A2:**
 - 0.6 U / Kg in 1st trimester
 - 0.7 U / Kg in 2nd trimester
 - 0.8 U / Kg in 3rd trimester
 - ✓ **Regimen:**
 - **2 injection regimen:** 2/3 in morning (NPH: Regular = 2: 1) before breakfast + 1/3 in evening before dinner (NPH: Regular = 1:1) "adjust by 1 h post prandial blood glucose after each meal "should be < 140mg%" if high increase the corresponding dose of insulin".
 - The patient must be warned against hypoglycemia. It is given SC in the abdomen, arms, thigh & buttocks.

- ✓ **In resistant cases:** thrice daily or cont infusion pump (**not better than injections**)
- ⇒ **Hospitalization:-** early to adjust the dose, late (36 w) for planned delivery & any time of complication
- ⇒ **Antenatal frequency:** / 2wks till 32nd wk, then /wk till 36th wk then hospitalize.
- ⇒ **Investigations to detect maternal complications**
 - ✓ KFT, LFT, inv. Of PET, Urine culture and sensitivity.
 - ✓ Culture and sensitivity for vaginal infections.
- ❖ **Ante-natal fetal surveillance**
 - ⇒ **Assessment of development and growth**
 - ✓ U/S (18-20 wks for CFMF), Echocardiogram (20 – 22 wks for congenital heart diseases)
 - ⇒ **Assessment of fetal wellbeing**
 - ✓ Daily Fetal kick counting chart at 26 – 30 wks till delivery
 - ✓ NST – CTG, BPP "**most commonly used**" & Doppler U/S

7 -What is the intranatal & postnatal management?

- ❖ **Intra-partum management**
 - ⇒ **Control during labor:**
 - ✓ IV drip of glucose if hyperglycemia occurred give insulin.
 - ✓ The morning dose may be withheld or halvened or given during labor 5% glucose + 5 units crystalline Insulin every 5 hrs.
 - ⇒ **Timing of delivery**
 - ✓ **Class A1:** Termination or spontaneous onset of labor (but not to pass date).
 - ✓ **Class A2, B, C, and D:** At 38 – 40 wks
 - ✓ Induction of labor after assessment of fetal lung maturity by amniocentesis but may be done earlier if there are maternal or fetal indication.
 - ✓ In case of repeated sudden unexpected IUFD → termination earlier than expected date of IUFD 1-2 wks
 - ⇒ **Method:** If there is no macrosomia or other indications of CS → vaginal delivery.
 - ⇒ **Care of newborn: (in NNICU + EXPERT NEONATOLOGIST)**
 - ✓ Cord blood is withdrawn for glucose, hematocrit, calcium and bilirubin
- ❖ **Post-partum management**
 - ⇒ **Gestational DM:**
 - ✓ stop insulin with 4 times daily glucose monitoring
 - ✓ Give regular insulin if once Blood glucose > 200 mg / dl
 - ✓ If persistently high → give biphasic insulin
 - ⇒ **Pre-gestational DM:** Adjust blood glucose level between 80 – 200mg/dl

1. **Breast feeding:** Lactation is allowed except in severely complicated cases who may not tolerate the stress of breast feeding
2. **Contraception period:** Lactation, mini-pills, low dose contraceptives, IUD, subcutaneous implant, sterilization, or barriers.

8-What is her future prognosis?

- ☛ Risk of type II DM (50% may develop overt DM within 20yrs)
- ☛ Recurrence of GDM (reported in 2/3 of cases especially in obese women)

9-What are the commonest fetal anomalies?

- ☛ CVS: 10 times as transposition of great vessels, VSD, coarctation of aorta
- ☛ CNS: 5 times as anencephaly, spina bifida, meningocele.
- ☛ GIT ...renal ...skeletal.

10-What is the long term sequel of DM?

- ☛ Triopathy: Vasculopathy, Neuropathy & Nephropathy.

11-What are the contraindications to get pregnant?

- ☛ HbA1c >12%.
- ☛ Marked renal affection is present.
- ☛ Progressive proliferative retinopathy.

9- How to classify a case of Diabetes by modified White Priscilla classification?

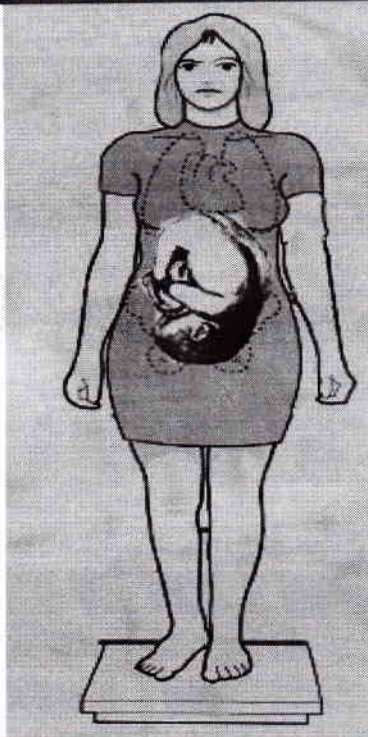
	Modified Priscilla White Classification 1978
Class A1	Diet controlled gestational DM " Fasting blood sugar < 105 mg / dl
Class A2	Gestational DM requiring diet & insulin (Fasting blood sugar > 105mg/dl).
Class B	DM of onset at age ≥ 20 years and / or < 10 years duration
Class C	DM of onset at age 10 – 19 years or 10 – 19 years duration
Class D	DM of onset at age ≤ 10 years and / or > 20 years duration
Class F	Nephropathy
Class R	Proliferative R etinopathy or Vitreous Hemorrhage
Class H	Ischemic H eart Disease
Class T	Renal T ransplantation

11-How is diabetes diagnosed after pregnancy?

Heart disease with pregnancy (Issue brief)

Causes:

- Rheumatic
- Congenital
- Ischemic
- hypertensive



Symptoms:

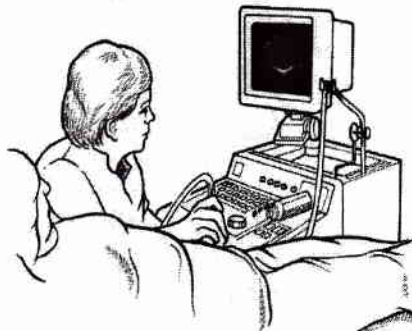
- OCD
- Backward failure
- Forward failure
- Rheumatic activity
- Infective endocarditis

Complications:

- Heart failure

Investigations:

- ECG
- X ray
- ECHO
- Catheterization



Treatment:

- Antifailure measures
- Anticoagulants
- Long acting penicillin
- Prophylaxis against infective endocarditis



Heart disease with Pregnancy

لو كانت الحالة

Cause

Rheumatic, congenital, IHD, HTN

أزاي بدأ معاكي مرض القلب هل مولوده به ولا بعد حمى روماتيزمية ولا بعد ذبحة صدرية ولا ضغط عالي

Clinical picture

OCD + other symptoms

Cough, expectoration, hemoptysis, Paroxysmal Nocturnal Dyspnea, chest pain, Rheumatic Activity, Infective Endocarditis, palpitation, ascites, LL edema, liver affection

هل فيه كرشه نفس - كحه مزمنة - بلغم بأستمرار (كميته- رائحته- لونه) - بتنامي على كام مخدة - هل بتصحي بالليل على كرشة نفس - هل فيه صعوبة بالهضم - هل عندك ألم في أعلى الجانب الأيمن - أصفرار بالعين - انتفاخ بالبطن - تورم بالقدمين - ألم في الصدر - مكانه وأيه اللي بيزوده أو يقلله - بتحسي بدوخة أو زغلة أو أغماء - هل تجددت الحمة الروماتيزمية

Complications

Heart Failure

هل حصل فشل عضلة القلب أثناء هذا الحمل واضطرتي تدخلي الرعاية المركزة

Investigations

هل عملتي أي فحوصات زي رسم قلب أشعة على الصدر أو أشعة تلفزيونية أو استره

Treatment

هل بتاخدي الدواء اللي عليه الحصان - حقنة البنسلين طويلة المفعول - أو أي أدوية أخرى
ناويين يعملوا أيه معاكي ويولدوكي أمتى

Diagnosis

- 🐼 Age, (parity, wks, presentation, position, in labor or not)
- 🐼 Etiology (rheumatic or congenital)
- 🐼 Site of cardiac lesion (e.g. Mitral)
- 🐼 Functional disease
- 🐼 Associations
- 🐼 Obstetric complications e.g. PHA
- 🐼 Fetal complication e.g. IUGR

Heart disease with Pregnancy

Personal history

As before

Complaint

She's pregnant in her 9th month, seeking antenatal care as she is known to have heart disease with pregnancy.

History of present pregnancy

She is pregnant at 36 weeks; her 1st day of the last menstrual period (LMP) was on 2/5/2005. Her expected day of delivery (EDD) will be on 9/2/2006. The patient knew that she is pregnant after missing a period & started to experience symptoms of early pregnancy (1st trimester) in the form of nausea vomiting, in-

crease frequency of micturition & longing. 10 days later pregnancy test was done in urine & appeared to be + ve, then U/S afterwards was done to confirm the diagnosis.

Her 1st trimester passed smoothly; there was no symptoms of hyperemesis gravidarum, or threatened abortion (vaginal bleeding associated with lower abdominal pain), or lower urinary tract infections (dysuria & suprapubic pain), or upper urinary tract infections (loin pain, rigors, fever, vomiting), or even abnormal vaginal discharge.

Quickening was perceived at 18th week. Since that she feels adequate fetal kicks (20kicks/day).

The cardiac condition started at the age of 12 years by a history of recurrent tonsillitis & rheumatic fever which ended by mitral stenosis & since that time the patient is on monthly penicillin injection. The condition is associated with manifestations of pulmonary venous congestion as recurrent attacks of dyspnea on moderate exertion, orthopnea, cough with white frothy expectoration & paroxysmal nocturnal dyspnea.

The condition was not associated with low COP symptoms in the form of dizziness, blurring of vision or syncopal attacks.

There are symptoms of systemic venous congestion in the form of dyspepsia right hypochondrial pain, jaundice, LL edema but no palpitations or chest pain. With the start of pregnancy the patient sought medical advice for which digoxin was prescribed in the form of 1 tab/ day except Thursday & Friday & the condition partially improved. One month ago the patient noticed again an increase in the severity of symptoms. She sought medical advice & a diuretic was added day on & day off. The condition is not complicated by IEC (hypochondrial pain, hematuria, fever or neurological manifestations) or Rheumatic activity (Arthritis, arthralgia, fever or chorea).

No manifestations of PE, or DM. No history of ROM, no history of vaginal bleeding, labor pain or passage of show.

The patient was admitted to Eldemardash hospital 2 wks ago. The patient had done investigations in the form of blood & urine analysis, U/S but no available reports. Echocardiography was done last week & revealed pulmonary hypertension. The patient is on digoxin, diuretics & vitamins.

Review of other body systems showed no abnormality.

Menstrual history

- ☛ The 1st day of the last menstrual period (LMP) was on 2/5/2005.
- ☛ The patient used, to have regular menses for 5 days cycling every 30 days average in amount (2pads/day) with spasmodic dysmenorrhea.
- ☛ No inter-menstrual pain, bleeding or discharge.

Obstetric history

As before

Past history

- No history of medical disorders other than Cardiac disease.
- No previous surgery except tonsillectomy.
- No history of allergy or blood transfusion.

Family history

- Both her parents are diabetic & hypertensive
- No history of consanguinity.
- No history of twin pregnancy or congenital fetal malformations.
- No history of tumors or TB.

Diagnosis

A 36 year old patient, P5, 36 weeks, not in labor, Rheumatic heart disease, mitral stenosis associated with pulmonary hypertension class II NYHA Classification

Another example

Personal history

As before

Complaint

The patient is admitted to the hospital for planned hospital delivery.

Menstrual history

The patient had her LMP on 3/12/2006, the patient used to have regular cycles with no history of recent hormonal contraception, the patient is sure of her date and this makes her pregnant at 37 weeks and makes her EDD on 9/9/2007.

History of present pregnancy

The patient is known to suffer from rheumatic heart disease for 4 years in the form of mitral stenosis for which she was prescribed lasix 20mg oral tablets once in the morning and lanoxine 0.25mg once/day except Friday

Regarding her 1st trimester, it passed smoothly with no symptoms suggestive of pulmonary venous congestion as dyspnea, cough, hemoptysis, expectoration, orthopnea and paroxysmal nocturnal dyspnea, no low cardiac output symptoms as dizziness, blurring of vision or recurrent syncopal attacks, no symptoms of systemic venous congestion as Rt hypochondrial pain, LL edema, jaundice and dyspepsia, no history of palpitation or chest pain, the patient was kept on the same cardiological treatment, no history of hyperemesis gravidarum, urinary tract infection or abnormal uterine bleeding.

Regarding her 2nd & 3rd trimester, it passed smoothly till the beginning of her 7th month when the patient began to complain of gradually increasing dyspnea even on mild exertion, no history of orthopnea or PND, The patient complained of coughing a blood tinged sputum, no history of symptoms of systemic venous congestion, no history of palpitation or chest pain. The dose of the diuretic was increased to 3 tablets/day and the symptoms slightly improved

No history of symptoms of DM or PE, No history of ROM, bleeding, pain or discharge, the patient is now pregnant in her 37 weeks and is admitted to the hospital for planned hospital delivery

Obstetric history

As usual

Past history

As usual

Family history

As usual

Diagnosis

P2 37 weeks cephalic not in labor Rheumatic mitral stenosis

Another example

Personal history

As usual

C/O

❖ The patient is admitted for planned hospital delivery

Menstrual history

The patient's LMP was on 3/12/2006, she used to have regular cycles and no history of hormonal contraception, the patient is sure of her date and this her pregnant at 37 weeks and makes her EDD on 9/9/07

History of present pregnancy

The patient is known to have her mitral valve replacement 10 years ago for which she was receiving oral anticoagulant in the form of Marivan 5mg tab. Before pregnancy

Regarding her 1st trimester, the patient was shifted from marivan 5mg tab to heparin 5000IU IV every 4 hours while being admitted in El Demerdash hospital, no history of vaginal bleeding, lower abdominal pain or vaginal discharge, no symptoms of hyperemesis gravidarum, no symptoms of UTI, An Echo cardiograph was done for her revealing a well functioning mitral valve prosthesis and there was no history of palpitation or chest pain

Regarding her 2nd trimester, the patient was shifted back from Heparin to Marivan, no symptoms of pulmonary venous congestion as....., no symptoms of systemic venous congestion as...., or palpitation or chest pain, no symptoms suggestive of PET or DM, no history of ROMs, bleeding pain or discharge

Regarding her 3rd trimester, it is passing smoothly till now with no history of pulmonary or systemic venous congestion, no history of palpitation or chest pain, the patient is admitted to the hospital for planned hospital delivery, no symptoms of PE or DM, no history of ROMs, bleeding, abdominal pain or vaginal discharge

Obstetric history

As usual

Past history

- ❖ The patient had her mitral valve replacement at El Demerdash hospital 10 years ago, during the surgery she received 6 units blood
- ❖ No history of other surgical procedures
- ❖ No history of DM, HTN or other medical disorders

Family history

As usual

QUESTIONS

1- How to examine a case of heart disease during pregnancy?

General examination

- ☛ **Vital data:** pulse to detect arrhythmias
- ☛ **Congested neck veins** (not reliable because of increased blood volume during pregnancy).
- ☛ **Lower limb edema** (may occur also due to pregnancy or toxemia).
- ☛ **Enlarged liver** (may be difficult to be palpated due to large uterus).

Chest and heart

- ☛ **Palpation:** Thrill
- ☛ **Auscultation:** pericardial rub, harsh systolic murmur, diastolic murmur, 3rd heart sound. "Gallop"

Abdomen

- ☛ IUGR, IUFD, and Polyhydramnios.

2- What is the NYHA classification of heart disease during pregnancy?

Grade	Symptoms	Degree of Compromise
Grade 1	No symptoms	uncompromised
Grade 2	Mild discomfort on Ordinary	slightly Compromised
Grade 3	Marked discomfort on less than Ordinary activities	markedly compromised
Grade 4	Symptoms at rest	Severely compromised

3- What are the mutual effects of heart disease & pregnancy?

❖ Effect of pregnancy on cardiac diseases

- ⇒ **A**rrhythmias, Rheumatic **A**ctivity
- ⇒ **B**acterial endocarditis
- ⇒ Increased **C**yanosis
- ⇒ **D**ecompensation (HF)
 - ✓ **During pregnancy**(28-32wks): → max ↑ in COP & blood volume
 - ✓ **During labor:**
 - **1st stage** → uterine contractions + pain
 - **2nd stage** → as 1st + bearing down
 - **3rd stage** → loss of shunting effect of the Placenta
- ⇒ **E**mbolism

❖ **Effect of cardiac diseases on pregnancy**

⇒ **Fetal:**

- ✓ IUGR, IUFD, abortion, prematurity

⇒ **Maternal:**

- ✓ Polyhydramnios (due to congestion)
- ✓ Prematurity (small fetus & soft cervix)
- ✓ Abortion (in severe cyanotic heart disease)
- ✓ PPH
- ✓ Puerperium → 4S

4- **Mention the management of case of heart disease during pregnancy?**

❖ **Pre-conceptual & Termination of pregnancy in 1st trimester only if**

- ⇒ Grade IV & Grade III if completed her family
- ⇒ Tight Aortic stenosis & Coarctation of Aorta
- ⇒ Pulmonary hypertension & Cyanotic heart diseases
- ⇒ Previous HF during pregnancy, Marfan & with aortic dilatation & cardiomyopathy

❖ **Management during pregnancy (Combined care by obstetrician & cardiologist).**

Grade I - II

⇒ **Antenatal: combined care by obstetrician & cardiologist.**

- ✓ Bed rest (10 hrs daily), Diet "decreased salt", weight gain should not exceed 12 kg, pneumococcal vaccine + Benzathine penicillin
- ✓ More frequent antenatal visits (every 1-2 wks till 28 w then weekly till 36 w then hospitalize)

⇒ **During labor**

✓ **Delivery better vaginally BUT CS in:**

- Aortic Stenosis with post stenotic dilatation
- Marfan & 1ry pulmonary Hypertension & Eisenmenger &

✓ **1st stage:**

- Semi-recumbent + epidural anesthesia except in pulmonary HTN, AS & cyanotic heart disease (morphine is better than Pethidine → no tachycardia). ↓PV ex., delay ROM + AB's ± Frusemide
- Vital signs every 15 min & every 10 min in the 2nd stage.
- (Pulse > 100 beat/min & RR > 24 breath/min → heart failure)

✓ **2nd stage:** Forceps delivery can be used to shorten the 2nd stage

✓ **3rd stage:** Avoid Ergometrin (↑heart load due to VC & may ↑ arrhythmias)

⇒ **Post natal:**

- ✓ Breast feeding is allowed unless severely compromised
- ✓ Contraception: avoid Estrogen containing preparation

Grade III - IV

⇒ **Antenatal:** Hospitalization & TTT of heart failure

- ✓ **A:** analgesics "morphine"
- ✓ **B:** breathe O₂ by IPPV
- ✓ **C:** catheterization of pulmonary A
- ✓ **D:** drugs, Diuretics, Dilators & digoxin

⇒ **Intra-natal** → CS

⇒ **Post natal** the same.

Prophylaxis against IECs	Prophylaxis against rheumatic heart disease
⇒ 2 gm of Ampicillin IV or IM plus ⇒ 1.5 mg /kg of Gentamycin IM or IV during active labor followed by one dose of Ampicillin 8 hrs post-partum	⇒ 1.2 million units of Benzathine penicillin monthly or daily dose of penicillin or erythromycin

❖ **Surgery: valve replacement**

- ⇒ **Tissue valve** needs **no anti-coagulant** Or
- ⇒ **Metallic valve** needs **anti-coagulant**
 - ✓ **1st 12w** → heparin 5000 IU SC/8h for fear of CFMF
 - ✓ **2nd & 3rd trimesters** → Warfarin(5mg) or Phenendione(50mg) till 36th w or **2 -3 week before labor** shift to heparin which is stopped with the onset of labor to be resumed 4-6 hr post partum "when the risk of PPH is gone"

❖ **Some give heparin all through**

- ⇒ Doesn't cross the placenta
- ⇒ has an antidote
- ⇒ short acting (2-4 hrs)
- ⇒ But higher risk of thrombosis, thrombocytopenia & osteoporosis.

5- What is the prognosis of a case of heart disease during pregnancy?

☛ **Depends upon:** Age, parity, the functional capacity of the heart, previous heart failure - Quality of medical care.

☛ **Long-term prognosis**

- Pregnancy might accelerate the rate of deterioration of cardiac function, shorten life span.
- Pregnancy has no deleterious effect on rheumatic heart disease

6- What are the differences between heparin and Warfarin?

	Heparin	Warfarin
Route	Parenteral (IV)	Oral
M W	High M W (Cannot pass the placenta)	Low MW (Crosses the placenta)
Follow up	Anti-thrombin	Anti vit K
Onset	1/2 hr & peak after 2-4 hrs & stays, for 6 hrs	Onset after 3 days for 3 days
Control	PTT (35 sec-45 sec)	PT (12sec -20 sec)
Antidote	protamine sulfate Or protamine Zn Insulin+ glucose	vit K Or FFP
Adverse effects	Bleeding tendency Hematoma Thrombocytopenia Osteoporosis (may lead to vertebral collapse), Avascular necrosis of neck of femur,	Bleeding tendency Teratogenic (Warfarin embryopathy), Microcephaly, MR, Chondrodysplasia punctata

7- What are the normal cardiac changes that occur in pregnancy?

- ❖ **Veins:** varicose veins (P, pressure by gravid uterus & ↑ blood volume)
- ❖ **Blood:**
 - ⇒ ↑ vol. 40-50% (max. 32-36 wk)
 - ⇒ ↑ Plasma 40% > cells 20% → physiological anemia & ↓ viscosity. Pathological if less than 11gm /dl.
 - ⇒ ↑WBC's ± 16,000/cm³ (more marked peripartum)& platelets >> mild↓
 - ⇒ ↑ ESR (50mm 1st hour due to ↑ fibrinogen)
 - ⇒ ↑ clotting factors (7,10 & fibrinogen → DVT) & ↓ fibrinolytic activity
 - ⇒ ↓ Minerals & vitamins (there is ↑ demand for iron which exceeds the amounts available in a normal diet. ↑Copper & ceruloplasmin (estrogen effect), ↑ fat soluble vit & ↓ water soluble vit in blood.
- ❖ **Apex:** shifted upward & laterally (4th ICS instead of 5th)
- ❖ **Pulse:** ↑ 10-15b/min (splitting of 1st & appearance of 3rd heard sounds + soft systolic murmur)
- ❖ **B.P.** ↓ in 2nd trimester (placenta acts as AV shunt, progesterone, estrogen & prostacyclin vasodilator effect) & ↑ in 3rd trimester (↑ blood volume)
- ❖ **Cardiac output:** 30- 50% max 24-28 wk & ↑ during labor (uterine contraction & loss of placental shunt).

8-What are cardiac symptom & signs that mimic normal pregnancy?

	Symptoms	Signs
Central	-Dyspnea -palpitation	-splitting of the 1st sound -Appearance of the 3rd sound -soft systolic murmurs
Peripheral	Malar flush ,swelling of lower limb	-peripheral venous congestion. -hyperdynamic circulation: H2O hammer pulse, cap. Pulsation

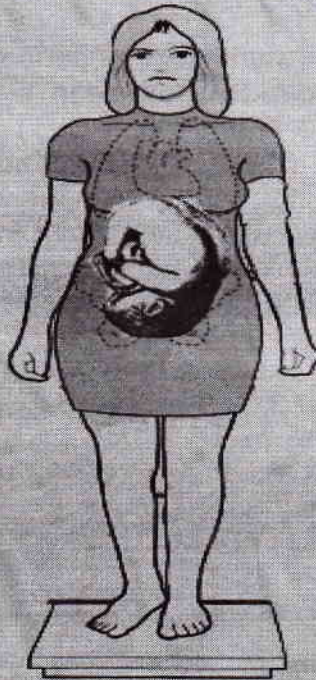
9- What are the causes of thrombocytopenia with heparin therapy?

- ☛ Early thrombocytopenia due to idiosyncrasy
- ☛ Late thrombocytopenia due to antibodies

Ante-partum hemorrhage (Issue brief)

Causes:

- Hypertension
- trauma



Symptoms:

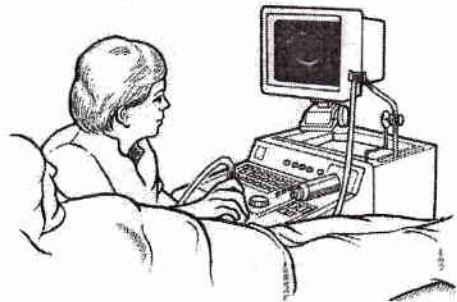
- OCD
- Color
- Clots
- Amount
- Relation to coitus

Complications:

- Fetal affection
- Maternal anemia

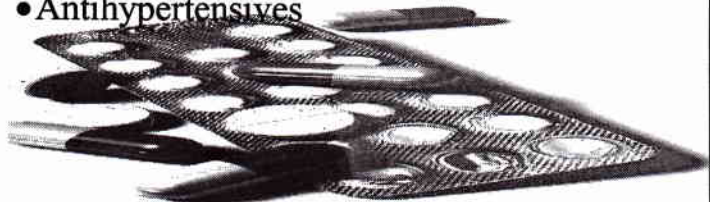
Investigations:

- US
- CBC
- LFT
- RFT



Treatment:

- Vitamins & minerals
- Antihypertensives



Ante - Partum Hemorrhage (APH) لو الحالة

She is pregnant in (...) month, coming for ANC as she's vaginal bleeding with pregnancy

Cause

Hypertension, trauma

هل حدث لوحده ولا بعد جماع أو خبطه وهل معاه ضغط أو ألم في المعدة مع صداع أو تورم بالجسم وزغله

C/P:

OCD

بقاله أد آيه - بيزيد ولا بيقل - مستمر ولا منقطع - بدأ أزاي

Color, clots, amount & associated pain

كمية أد آيه - لونه آيه - معاه كلاكيع زي الكبد - معاه ألم

Complications:

Fetal affection & maternal anemia

هل أحتاجتي نقل دم - لعب الطفل كويس

Investigations

U/S, CBC, LFT, RFT,

هل عملوك أشعة تلفزيونية آيه النتيجة - عملتي صورة دم - وظائف كبد وكلى - عملتي منظار

Treatment

هل خدتي أي علاجات وناويين يولدوكي أمتي

Diagnosis

- ❖ Age, (parity, wks, presentation, position, in labor or not, APH most probably...
- ❖ Association
- ❖ Complication
- ❖ For further examination & investigation

Antepartum hemorrhage

Ante-partum hemorrhage		
painless	painful	
	Labor pains	Revealed accidental
Recurrent Causeless	On and off pain, increase intensity Shortening interval between pain	past history of HTN, PET, PHA trauma
Placenta previa, vasa pre-via Excessive show	Accidental hemorrhage, rupture uterus & local causes	

Personal history

As before

Complaint

She's pregnant in her 7th month & admitted seeking antenatal care as she's known to have antepartum hemorrhage with pregnancy.

History of present pregnancy:

She's pregnant at 32 weeks, the 1st day of her last menstrual period (LMP) was' on 1/1/2006 & her expected date of delivery will be on 8/10/2006.

The patient knew that she is pregnant after missing a period & started to experience symptoms of early pregnancy in the form of nausea, vomiting, increase in the frequency of micturition & longing. 10 days later pregnancy test was done in urine & appeared to be +ve, then U /S afterwards to confirm the diagnosis.

During the 1st trimester, she experienced vaginal spotting which was not related to trauma or sexual intercourse for which she received. Uterogestan 1 tablets 3 times daily with bed rest & the condition resolved. There were no symptoms of hyperemesis gravidarum, or lower urinary tract infections (dysuria & supra-pubic pain), or upper urinary tract infections (loin pain, rigors, fever, vomiting), or any abnormal vaginal discharge.

There was no symptoms of diabetes as polyuria, polyphagia, polydipsia & loss of weight, or even tingling & numbness in Upper & lower limbs. There is no history of PE (headache, blurring of vision, epigastric pain or swelling of limbs). No polyhydramnios associated (Excessive abdominal enlargement & pressure symptoms). No history of premature uterine contractions. Quickening was perceived at 20th week. Since that she feels adequate fetal kicks (20kicks/day). No history of ROM, no history of vaginal bleeding, labor pain or passage of show.

One month ago the patient experienced recurrent attacks of vaginal bleeding following sexual intercourse. Bleeding was of moderate amount, bright red 'with no blood clots or abdominal pain & no effect on fetal movement. The patient sought medical advice; US was done & revealed placenta previa. The patient was admitted to El Demerdash hospital with complete bed rest & observation. The patient has done investigations in the form of blood & urine analysis, D /S but no available reports. The patient is waiting for cesarean delivery once fetal maturity is assure~. Review of other body systems showed no abnormality.

Another example

Personal history

As usual

C/O

Vaginal bleeding of 2days duration

Menstrual history

As usual

HPP

The patient had an attack of vaginal bleeding 2 days ago, the bleeding was bright red in color, moderate in amount, not in amount, not associated with pain and it was causeless, no history of labor pains, no symptoms suggestive of PE or symptoms suggestive of polyhydramnios

Regarding her 1st trimester, it passed smoothly with no history of hyperemesis gravidarum, no history of abdominal pain or abnormal vaginal bleeding, no history of symptoms suggestive of UTI, the patient only received general tonics

Regarding her 2nd trimester, no history of symptoms suggestive of PE or DM, no history of ROMs, no vaginal bleeding, no abdominal pain and no history of abnormal increase in the abdominal size, quickening was perceived at 20th week

Regarding her 3rd trimester, it is passing smoothly, the patient is pregnant now at her 35weeks with no symptoms suggestive of PE, DM or polyhydramnios, no history of ROMs or lower pains, 3days ago the patient began to complain of recurrent painless, bright red bleeding for which she is now admitted to the hospital and she is going to have a LSCS done for her at 37weeks

Questions

What is the definition of Antepartum Hemorrhage?

- ❖ Bleeding from the genital tract occurring after 20th week of pregnancy & during labor before delivery of the fetus.

What is the character of bleeding in placenta previa?

- ❖ Characterized by being
 - ♣ Bright red
 - ♣ Painless
 - ♣ Causeless
 - ♣ Recurrent
 - ♣ Vary from slight to profuse hemorrhage & peak incidence at 34th w.

What is the classification of placenta previa?

a. Low-lying placenta (G1: Placenta previa Lateralis):

The placental edge actually not reaching the internal OS (I.O.) but close proximally to it

b. Marginal Placenta previa (G2: Placenta previa Marginalis)

The placental edge is at the margin of the (I.O.)

c. Partial Placenta previa (G3: Incomplete Placenta previa Centralis) The (I.O.) Is partially covered by the placenta

d. Total Placenta previa (G4: Complete Placenta previa Centralis): the (I.O.) is completely covered by the placenta.

What is the classification of abruptio placenta?

- ❖ Revealed hemorrhage
- ❖ Concealed hemorrhage
- ❖ Combined or mixed type
- ❖ Marginal sinus hemorrhage

What is the transvaginal U /S classification of placenta previa?

What is the pathogenesis of APH?

- ❖ In placenta previa: due to shearing effect on formation of the LUS
- ❖ In abruption placenta: due to rupture of spiral artery in the deciduas basalis which leads to placental separation

What are the complications of APH?

Placenta previa

Fetal complication

- ❖ **PNMR is 1% especially in prematurity**
- ❖ **IUFD, IUGR, Prematurity & Neonatal DEATH**

Maternal complication

- ❖ **MMR is <1% due to hemorrhage & sepsis**
- ❖ **During pregnancy**
 - ⇒ PTL
 - ⇒ Mal- presentations & Non engagement.
 - ⇒ Hemorrhage & anemia or shock.
- ❖ **During labor**
 - ⇒ **1st stage (4)**
 - ✓ Prolonged labor
 - ✓ Large bag of fore water
 - ✓ PROM
 - ✓ Prolapse of the cord
 - ⇒ **2nd stage:** obstructed labor
 - ⇒ **3rd stage:** PPH due to atony, Retained parts or trauma due to friable LUS
- ❖ **During puerperium (4S)**
 - ⇒ **Puerperal Sepsis due to**
 - ✓ Poor G.condition, retained parts, placental bed to the cervix and ↑infection due to surgical interference
 - ⇒ **Sub-involution**
 - ⇒ **Secondary PPH & Secondary anemia**

In abruptio placenta:

Fetal complication

- ❖ **IUFD, IUGR, Prematurity & Neonatal DEATH**

Maternal complication

- ❖ **Amniotic fluid Embolism.**
- ❖ **Post-partum hemorrhage.**
- ❖ **Couvelaire uterus** (Utero-placental apoplexy): extravasated blood into the uterine musculature & beneath the serosa lead to impairment of the uterine contractility after delivery → poor contractile uterus → severe **PPH**
- ❖ **DIC** (Abruptio placenta is the most common cause of DIC)
- ❖ **Sheehan syndrome.**
- ❖ **Shock, Pre renal failure,** DIC & microthrombi obstruct the renal capillaries, PET, overdistension of the uterus leads to spasm of the renal vessels(**Utero – renal reflex**).

❖ **Rupture uterus.**

How to identify the placental site from fetal membranes by examination?

Do you prefer early or late rupture of membrane during labor in low lying placenta?

What is the treatment of APH?

In abruptio placenta

❖ **Revealed:** - as placenta previa

⇒ **Conservation is rare**

⇒ **Follow up of the hematoma size by U/S)**

❖ **Concealed:-**

⇒ **Resuscitate the patient**

- ✓ Blood transfusion, IV fluids "Lactated Ringer" & Oxygen
- ✓ HCT > 30%
- ✓ UOP > 30 ml/hr .CVP is inserted if more fluids are administered

⇒ **Termination**(after correction of the coagulation defects)

✓ **CS:** if the fetus is alive & very rapid delivery is needed (Correct 1st DIC)

✓ **Vaginal delivery:** -

- If dead fetus + dilated Cx
- Easy due to well-engaged head + ↑ basal uterine tone.
- Precautions as in low lying placenta.

✓ **CS hysterectomy:** in Couvelaire uterus or atonic PPH

⇒ **TTT of complications** e.g. DIC

Placenta previa

❖ **Conservative treatment**

⇒ **When**

- ✓ If the patient is not in labor, no fetal distress & immature fetus
- ✓ Mild hemorrhage

⇒ **How**

✓ **The patient:**

- Close observation, bed rest, diet rich in iron, sedation & Anti D.
- Avoidance of P/V, no vaginal douches.
- Immediate availability of Blood transfusion,

✓ **Fetus:** fetal wellbeing, corticosteroids for ↑ fetal maturity.

✓ **Placenta:** Repeated U/S for placental migration

❖ **Termination**

⇒ **When**

- ✓ If the patient is in labor **or** fetal distress **or** mature fetus
- ✓ Severe hemorrhage:

⇒ **How**

- ✓ Resuscitation & anti-shock measures + consent hysterectomy
- ✓ It's done by LSCS or vaginal delivery in low lying placenta
- ✓ Management of 3rd stage, guard against PPH & treatment of complications.
- ✓ Care of the neonate

Other questions on APH

- **Do you prefer uses or LSCS in placenta previa?**
- **What is the long term prognosis of APH?**
- **Define Vasa Previa:**
 - Presence of fetal blood vessels traversing the cx below the presenting part.
- **What is the character of bleeding of Vasa Previa?**
 - Mild bleeding with severe fetal distress.
- **How to differentiate maternal from fetal blood?**

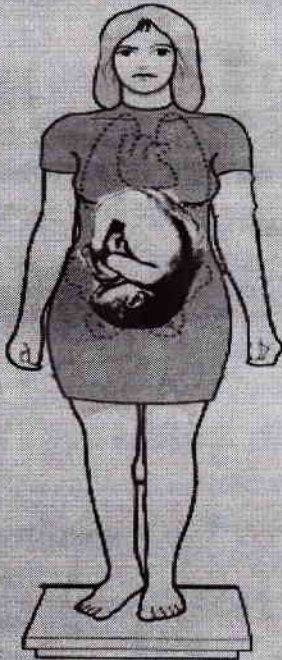
	Maternal blood	Fetal blood
Hb	10-12gm/dl	16-18gm/dl
Blood groups & RH	May be different	May be different
Microscopy	Non nucleated RBCS	Nucleated RBCS
Spectro photometry	Hb A	Hb F
Kleihauer-Betke test (acid elution test)	Ghost cells	No hemolysis of RBCS
APT test (alkaline denaturation test)	Blood + equal amount of 0.25% NaOH	
	Brownish	Remains pink

- **How do you confirm placenta previa?** U/S, No PV should be done.
- **What is the indication for PV?**
 - If she is in labor & US detected a minor degree allowing the possibility of VD but done in the theatre with available blood (double- set up).
- **What is the major problem you may face during CS?** Placenta accrete
- **How to manage it?** Supravaginal hysterectomy.
- **Is there is any alternative?**
 - Yes, when the patient is in need of her uterus (low parity) the placenta might be left + methotrexate.
- **What are the other causes for hysterectomy?**
 - Severe uncontrolled atony threatening life.
- **Could she bleed after delivery? Why?**
 - Yes, PPH due to.
 1. Atonic ...LUS is weaker than UUS.
 2. Retained 5% ...LUS have no Nitabuch layer.
 3. Traumatic ...during trial of removing an adherent placenta.
- **What are the precautions to be taken before delivery?**
 - Blood cross matching & preparation.
 - Both maternal & neonatal ICU.
 - Expert surgical team.
- **What are the risk factors for placenta previa?**
 - Multiparity, scars, twins, DM (large placenta), advanced age, previous history (recurrence 4-8%).

Pregnancy induced hypertension (Issue brief)

Causes:

- Previous hypertension
- Renal disease



Symptoms:

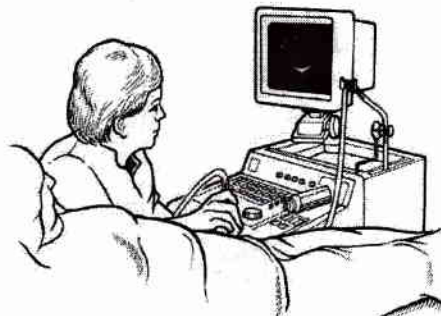
- Headache
- Blurring
- Epigastric pain
- Swelling of limbs

Complications:

- Convulsions
- Fetal affection

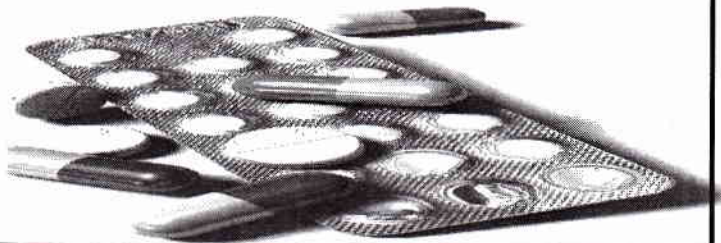
Investigations:

- CBC
- Albumin in urine
- LFT
- RFT
- Fetal wellbeing



Treatment:

- Antihypertensives



Pregnancy induced Hypertension لو كانت الحالة

She is coming for ANC because she has hypertension with pregnancy

Cause

Previous hypertension & kidney disease

هل عندك ضغط سابق أو مرض سابق بالكلية

Symptoms & complications

Edema, headache, epigastric pain, visual, convulsion, fetal complications

هل بتحسي أنك مورمه والدبلة ضاقت على أيديك، هل بتحسي بصداع – هل بتحسي بألم عند فم المعدة – هل عينك بتزغلل مع الصداع – هل اتشنجتي – هل لعب الطفل حاسة بيه وكويس ولا لا

Investigations

CBC, Albumin in urine, LFT, KFT, placental insufficiency (U/S → IUGR, Oligohydramnios)

هل عملتي صورة دم، زلال بالبول، أشعة تلفزيونية وقالولك أن العيل صغير أو الميه حواليه قليلة وعملت وظائف كلى وكبد

Treatment

Antihypertensive drugs

هل خدتي أي علاجات للضغط، نوعها أيه وكميتها أيه وبقالك أد أيه بتأخديها وآخر مرة تم قياس الضغط وناويين يولدوكي أمتي

Diagnosis

- ♠ Age, parity, wks, presentation, position, in labor or not.
- ♠ Any association
- ♠ Any complication

Pregnancy induced hypertension

Personal history

Complaint

She is pregnant in her 8th month & coming for antenatal care as she is known to have hypertension with pregnancy.

History of present pregnancy

She is pregnant at 34th week, the 1st day of her last menstrual period (LMP) was on 2/4/2005 & her expected date of delivery (EDD) will be on 9/1/2006.

The patient knew that she is pregnant after missing a period & started to experience symptoms of early pregnancy in the form of nausea, vomiting, increase in the frequency of micturition & longing. 10 days later pregnancy test was done in urine which was +ve, then US is done afterwards to confirm the diagnosis.

Her 1st trimester passed smoothly, there were no symptoms of hyperemesis gravidarum, or threatened abortion (vaginal bleeding associated with. lower abdominal pain), or lower urinary tract infections (dysuria & suprapubic pain), or upper urinary tract infections (loin pain, rigors, fever, vomiting), or even abnormal vaginal discharge. Quickening was perceived at 20th week. Since that she

feels adequate fetal kicks (20kicks/day). At 30 weeks of gestation the patient started to complain of progressive lower limb edema for which the patient sought medical advice. History was taken & examination was done & revealed elevated blood pressure. The patient had done investigations in the form of blood & urine analysis, US but no available reports. The patient was advised to take more periods of rest & to reduce salt intake in diet with follow up of fetal movement. One week later, there was more increase in blood pressure & appearance of proteinuria for which the patient was admitted & was given Aldomet tablets 500mg 3 times daily.

No history of decreased fetal kicks, blurring of vision or persistent headache. No history of DM. No history of ROM, no history of vaginal bleeding, labor pain or passage of show.

Now the patient is still on Aldomet 500mg but 4 times daily, Aspocid 75 mg also is taken one tablet daily. Fetal monitoring is done regularly. She's waiting for termination of pregnancy after assurance of lung maturity.

Review of other body systems revealed no abnormality.

Diagnosis

A 24 year old female PG, 34 weeks, not in labor, with pregnancy induced hypertension admitted for further investigations.

*Another example

Personal history

As usual

Complaint

The patient is referred from the outpatient clinic for investigating the cause of HTN

Menstrual history

As usual

History of present pregnancy

The condition started 2weeks ago when the patient discovered that she was hypertensive during a routine ANC visit, Her BP was 150/100 and there was Albuminuria = +1 by dipsticks and so the patient was referred to El Demerdash hospital to be investigated.

In the hospital the high blood pressure was confirmed, total protein in 24 hours urine was done and was 200mg/24 hrs urine, The patient was not prescribed Antihypertensives, she is on blood pressure chart /4hours and strict fetal wellbeing monitoring.

Regarding her 1st trimester, it passed smoothly with no history suggestive of hyperemesis gravidarum, no history of lower abdominal pain or vaginal bleeding & no history of UTI.

Regarding her 2nd trimester, quickening was perceived at 20 weeks, no history suggestive of PE as headache, dizziness, lower limb edema, no history of DM as polyuria, polydipsia and polyphagia, no history of ROM, vaginal bleeding or labor pains.

Regarding her 3rd trimester, the patient is now pregnant at 37weeks and is diagnosed as having mild PE for which she is admitted to the hospital to be kept under observation till termination of pregnancy at 38weeks, no symptoms suggestive of diabetes, no history of ROM, vaginal bleeding or labor pains.

Obstetric history

As usual

Past history

- ♣ No history of HTN or chronic renal disease.
- ♣ No history of diabetes.
- ♣ No history of previous surgical interference.

Family history

- ♠ +ve family history of PE.
- ♠ Her mother is hypertensive.

* Another example

Personal history

As usual

Complaint

- o The patient is referred to the hospital from the out-patient clinic for control of BP.

Menstrual history

As usual

H.P.P

The patient is known to be chronic hypertensive for 3 years, the patient was on Capoten 25mg tab. twice daily before pregnancy but she was prescribed Aldomet 50mg tab. tds since the start of pregnancy

Regarding her 1st trimester, it passed smoothly with no symptoms of hyper-emesis gravidarum, no history of urinary tract infection, her blood pressure was well controlled on the Aldomet 50mg tab tds

Regarding her 2nd trimester, quickening was perceived at 20weeks, no history of symptoms of DM as polyuria, polydipsia and polyphagia, the patient was controlled on the same dose of Aldomet, Total protein in 24hours urine was done once and it was normal, fetal kicks were satisfactory no history of vaginal bleeding, rupture of membranes or labor pains

Regarding her 3rd trimester, the patient's BP was controlled till 3days ago when the patient's blood pressure began to increase steadily, the dose of Aldomet was increased up to 500mg three times/day and the patient was referred to the hospital for control of the BP and to the hospital for control of the BP and planned hospital delivery, no history symptoms suggestive of DM, no history of vaginal bleeding, ROM or labor pains, fetal kicks are felt satisfactory

Past history

- ♠ The patient is hypertensive for 3 years and was on capoten 25mg tab tds prior to pregnancy

QUESTIONS

Classify hypertensive disorders during pregnancy.

❖ **Pregnancy induced Hypertension (PIH):**

- ⇒ Hypertension due to pregnancy & resolves spontaneously after pregnancy.
- ⇒ Hypertension without proteinuria or pathological edema
- ⇒ Pre-eclampsia or EPH gestosis
- ⇒ Eclampsia

❖ **Pregnancy aggravated hypertension:**

- ⇒ Pre-existing hypertension worsened by pregnancy.
- ⇒ Super-imposed pre-eclampsia
- ⇒ Super-imposed eclampsia

❖ **Chronic (coincidental) hypertension:**

- ⇒ Hypertension **before pregnancy or before 20th wks' gestation** or elevated BP that diagnosed during pregnancy and persists after puerperium
- ⇒ **Etiology:** essential hypertension - renal diseases - congenital adrenal hyperplasia - pheochromocytoma - Cushing syndrome - Conn's disease - coarctation of aorta".

What's preeclampsia?

- ♠ Elevated BP along with proteinuria (with or without edema) after the 20th wks (except in GTD or multiple gestations in which the disease appears before the 20th wks) in a previously healthy lady and usually resolves - spontaneously after labor.

What are possible causes of preeclampsia?

Etiology: "Unknown but theories"

- ❖ **Abnormalities of PG:** increase in VC PG and decrease VD PG
- ❖ **Immunological theory:** delay in the formation of blocking antibodies.
- ❖ **Placental protease dysfunction "the most recent theory"**
- ❖ **Genetic (AR):** ↓NO, ↑endothelins, uterine overdistension, Factor V Leiden mutation, RAS activation
- ❖ **Absent 2ry wave of invasion**

Risk factors of PE

- ❖ **Very old or very young** (<20 or >35 yrs) PG (genuine PET)
- ❖ **Hyperplacentosis:** Twins, DM, Vesicular Mole, and Polyhydramnios, APL
- ❖ **Renal and chronic hypertension,**
- ❖ **Previous history**
- ❖ More common in **low social class, obese, seasonal variations** (More in Cold weather may be due to V.C).

What are the sequels of PE?

- ♣ Mild cases have 100% cure rate without any deleterious effects upon mother or fetus
- ♣ Severe form can be managed safely
- ♣ In 95 - 100% of cases promptly managed.
- ♣ 5 - 10% of residual hypertension will continue.
- ♣ Recurrence rate of 30 - 50%.
- ♣ Residual renal damage of 3 - 5%.
- ♣ Reversible anuria in 90% of cases complicating EPH gestosis, can survive with or without dialysis
- ♣ Renal transplantation is the only hope or irreversible renal damage and irreversible anuria.

What is the treatment of mild PE?

- ❖ **Prophylaxis :** low dose aspirin
- ❖ **Conservation:** bed rest, sedation, decrease salt in diet, observation (maternal & fetal; growth & FFW), anti-hypertensive (donot ↓ placental blood flow).

❖ Drugs	Action	Dose	Side effects
α-methyl dopa (Aldomet)	Central False neurotransmitter	250-2000mg/d	Hepatitis
Hydralazine (Apresoline)	Peripheral Vasodilator	10mg 4 times/d Up to 200mg/d	Drug induced SLE+tachycardia
Labetalol (Trandate)	A & β blockers	200mg tab. therapeutic evel 1600mg Max 2400mg/d	Not used in heart block
Nifedipine (Adalat)	CCB	10 mg/20min for 3 doses Then 10-20mg/4-	Not used in 1 st trimesterOr with MgSo4

⇒ Avoid ACEIs (decrease placental blood flow) & diuretics (except in BF or pulmonary)

- ❖ **Termination:** if mature , fetal distress or in labor or become sever
Either vaginal delivery or CS if indicated

What is the treatment of severe PE?

As the treatment of eclampsia

What is HELLP syndrome?

- ♣ Hemolysis - elevated liver enzymes - low platelets.

What is the classification of PE?

- ♣ Mild, severe, impending eclampsia, fulminant & eclampsia

What does impending mean?

- ♣ Severe worsening criteria +hyperreflexia

What are the worst complications of PE?

- ♣ **Maternal:** death
- ♣ **Fetal:** IUFD

How to avoid recurrence in next pregnancy?

- ♣ Regular antenatal care to detect hypertension early
- ♣ Certain screening tests especially Doppler
- ♣ Certain drugs esp Aspirin ,vit E & vit E

What are the criteria of severity of pre-eclampsia?

Criteria of severity:-

1. Headache, blurring of vision, Epigastric pain
2. pulmonary edema
3. Systolic BP > 160 mmHg & diastolic BP > 110 mmHg
4. Proteinuria > 500 mg/dl, Oliguria
5. HELLP syndrome, elevated liver enzymes
6. elevated serum Creatinine
7. thrombocytopenia, DIC, hemolysis
8. IUGR or IUFD

What is the incidence of Eclampsia?

- ♣ 1/1000 delivery

What is the home management of Eclampsia?

- IV sedation.
- IV line.
- avoid visual or auditory stimuli.
- Transfer to the hospital.

What is the management of eclampsia at the reception room & ICU?

At the reception room

- ♣ IV line - IV sedation - Free airway - Transferal to ICU.

At the ICU

- ♣ Semi-dark and quiet room
- ♣ Patient lies on her side to avoid aspiration
- ♣ Observation for (Vital data - UOP - Fluid chart - Level of Consciousness - Drugs taken)
- ♣ Oxygen administration
- ♣ Suction
- ♣ During fit (place the patient on her side - airway care - IV sedation - anti-convulsant)
- ♣ Facilities of assisted vaginal Delivery if needed
 - ❖ Tertiary center
 - ❖ Mother (eclampsia room, ICU, blood bank)
 - ❖ Fetal (good ICU with expert neonatologist)

What is the anticonvulsant treatment of Eclampsia?

❖ Drugs	➤ Mechanism	➤ Dose	➤ Toxicity
MgSO₄ Drug of choice	➤ Sub-cortical depressant ➤ Peripheral skeletal muscle relaxant ➤ Transient hypotensive effects ➤ VD & Diuretic ➤ Cerebral dehydrating agent	➤ Initial dose o 6 g IV then 2 g / hr by drip Or ➤ 4 g IV + 5 g IM in each buttock then followed by 5 g / 4 hrs ➤ It is continued till 48 hr after last fit or delivery	Detected by: ➤ Absent ankle and knee reflexes "1st sign" ➤ Respiratory depression ➤ Cardiac depression Anti-dote ➤ 10 ml of 10% of calcium gluconate What are the precautions before each dose?
Diazepam	➤ Dose 10 - 20 mg IV then drip ➤ Advant: more rapid – may be given in renal affection ➤ Disadv: depresses the consciousness – more neonatal effects "hypotonia, respiratory difficulty"		
Pentothal Sodium		➤ 5 - 10% of 0.5 - 1 gm IV	

What is the remote care of a case of PE?

- ✦ **Renal functions & blood pressure are measured 6 weeks later.**
- ✦ **Screening for EPH gestosis in next pregnancy (+ Low dose Heparin).**

CHRONIC HYPERTENSION

What are the different types of hypertension?

- ❖ Pregnancy induced hypertension = PET (PIH)
- ❖ Pregnancy associated (coincidental /chronic) hypertension
- ❖ Pregnancy aggravated hypertension (super-imposed)

What are the antihypertensive contraindicated in pregnancy?

- ❖ ACE inhibitors: fetal renal anomalies
- ❖ Diuretics except in severe cases as heart failure

How to follow the fetus till delivery?

Symptoms

- ❖ Fetal kick chart or Cardiff –count-to-ten (subjective)

Examination

- ❖ Gravidogramprogressive increase in FL above SP (1cm/wk after 20 week)
- ❖ Abdominal girth ...progressive increase in abdominal circumference
- ❖ Maternal weight gain

Investigation

U/S

- ❖ **Fetus:** life, site (ectopic), number, CFMF, biometry (measurements).
- ❖ **Amniotic fluid:** volume, turbidity (for lung maturity).
- ❖ **Placenta:** position, tumors, hge, grading 0,I,II,III for lung maturity).
- ❖ **Uterus:** anomalies, fibroids, remnants after delivery or abortion.
- ❖ **Cervix:** diameters for patulous internal os.

Doppler by Johann Christian Doppler

- ❖ Systolic/diastolic ratio = S/D ratio
- ❖ Resistance index = $(S-D) / S$
- ❖ Pulsatility index = $(S-D) / \text{mean}$

Non stress test (CTG)

- ❖ Normally ...FHR accelerates in response to fetal movement
- ❖ Reactive test (-ve)2acc of at least 15b/min in 20 min
- ❖ Non-reactive test (+ve) ...<2accelerations in 40 min

Do you like to insert a urinary catheter in the patient?

To monitor state of shock to give MgSO₄, Also to have a protein sample

Is MgSO₄ a safe drug?

- ❖ No, narrow therapeutic margin (only 4-7meq/l) so before each dose ensure that:
 - Knee jerk is still present
 - Respiratory rate >16 /min
 - Urine >30-60 ml/hr
 - Serum Mg is < 10 meq/l

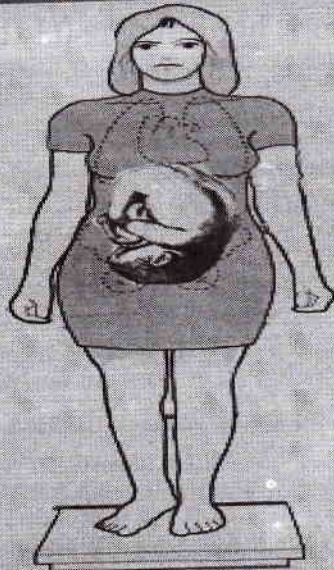
Q: When we will stop it?

48 hrs after delivery

RH alloimmunization with pregnancy (Issue brief)

Causes:

- Failure to take the prophylaxis



Symptoms:

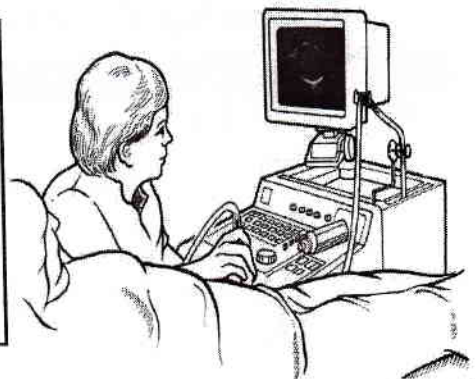
Repeated

- IUFD
- NN jaundice
- NN anemia

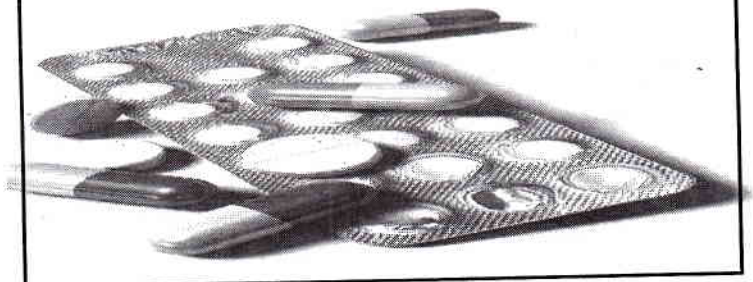
Complications:

Investigations:

- US
- Antibody titer
- Amniocentesis



Treatment:



RH alloimmunization with pregnancy

Complaint

She is pregnant at her () month and was admitted for planned delivery as she is RH -ve & (has repeated IUFD).

History of present pregnancy

Cause

- ❖ When she 1st knew that she is RH-ve during pregnancy or in between pregnancies
- ❖ Intake of RH antibody prophylaxis.

امتي عرفتي انك RH سالب وهل اخذتي الحقنه بعد كل حمل

Clinical picture

History of neonatal complications (neonatal jaundice or anemia, admission to neonatal unit, history of phototherapy or exchange transfusion or neonatal delivery of IUFD & hydrops fetalis)

هل ولدت طفل مورم او اصفر بعد الولاده او احتاج لنقل دم او لعلاج ضوئي

Investigations

- ❖ US, antibody titers, amniocentesis

هل عملتي اشعه او تحاليل للاجسام المضاده او تم بزل للسائل الامنيوسي

EXAMPLE

Complaint

She is pregnant at her 9th month and was admitted for planned delivery as she is RH-ve & not immunized before.

History of current pregnancy

The patient knew that she is pregnant after missing a period & started to experience the symptoms of early pregnancy in the form of nausea, vomiting, increased frequency of micturition and longing. She hadn't done pregnancy test or ultrasound in her 1st trimester. Finally the 1st trimester passed uneventfully without any bleeding, discharge or suggestive symptoms of hyperemesis gravidarum.

In the 2nd trimester, the patient started to feel abdominal enlargement & quickening was felt during the 23rd w of pregnancy & they were and still satisfactory up till now (> 10/day), 2nd trimester passed uneventfully without any bleeding, pains, discharge, abnormal contractions & without headache, blurring of vision or epigastric pain.

In the third trimester, the patient began to feel symptoms of late pregnancy, in the form of respiratory discomfort, abdominal enlargement & increased frequency of micturition. There was not any bleeding, discharge, headache or blurring of vision. There was no fever. During the third trimester the patient went to get antenatal care in a private clinic, and after she did RH test she was found to be RH -ve. Her husband is RH -ve & her living child is RH -ve. The patient had not been immunized by anti D after her 1st or 2nd deliveries & so she was admitted to plan for her delivery in EL DEMERDASH hospital.

On systemic review; the GIT, respiratory, CVS & urinary system was free.

In the hospital she had; Kidney function tests & liver function tests and were normal. US: normal fetal growth of 37 weeks. Blood tests: RH-ve. Anti-body titer = 0.4 ugm/ml.

Diagnosis

25 year old lady, p2+ 0, 35+5 weeks by dates, cephalic, not in labor. RH-ve not sensitized.

Questions

What are the causes of erythroblastosis fetalis?

- 1- RH isoimmunization (most common)
- 2- ABO incompatibility: uncommon can affect the first baby & mild as:
 - A- IgM is the main antibody formed and it can't cross the placenta
 - B- ABO antigens are distributed on body cells
- 3- Others: Kell, Kidd, Duffy incompatibility

What are the factors affecting the degree of sensitization?

1- Amount of fetomaternal transfer

- o 0.1 ml of fetal blood is sufficient
- o After labor 30 ml of fetal blood (=15 ml packed RBCS) are transferred

2- ABO incompatibility

- ❖ If incompatible > 2% (RBCS destroyed by ABO before sensitization)
- ❖ If compatible > > 16%

What is the prognosis of a case of erythroblastosis fetalis?

- 1- **Test for homozygosity of the husband:** If homozygous consider contraception in sever affected cases
- 2- **Causes of failure of anti D prophylaxis:**
 - Too small dose or too late or bad quality
 - The patient is already immunized

Compare between exchange transfusion and intrauterine transfusion?

⇐ Intra uterine transfusion	⇐ Exchange transfusion
o high zone + immature fetus	o Previous bad obstetric history, prematurity o Hb > 15 gm/dl, bilirubin > 20 mg/dl or rising > 1 mg/hour
➤ Type: RH -ve 0	➤ Type: RH -ve 0
➤ Amount: (GA (weeks) - 20) x 10 ml packed RBCS (after 20 w)	o 160 ml/kg fetal weight
➤ Route: Intra-peritoneal or intra-vascular through cordocentesis	o Through umbilical cord or IV
➤ Complications o Fetal distress, trauma, PROM & chorioamnionitis. overload >> heart failure & faulty cross matching, sepsis	➤ Effects: o removes antibodies, bilirubin improves anemia

How to evaluate a case of erythroblastosis fetalis?

❖ **History:**

- ⇒ **PG** → previous blood transfusion.
- ⇒ **MP:**
 - ✓ 1st baby usually not affected,
 - ✓ later on repeated NN jaundice or death
 - ✓ habitual abortion in a descending manner

❖ **Examination**

❖ **Investigations:**

- ⇒ **RH & ABO are routinely done in 1st antenatal visit.**
 - ✓ If -ve, perform RH of the husband
 - ✓ If +ve:
 - The patient isn't immunized or received prophylaxis: arrange for prophylaxis
 - The patient didn't receive adequate prophylaxis → indirect coomb's
- ⇒ **Indirect combs:** done by maternal serum
 - ✓ If less than 1/16 or < 0.5µg/ml → follow up every 4 weeks
 - ✓ if more than 1/16 or > 0.5µg/ml → amniocentesis
- ⇒ **Amniocentesis:**
 - ✓ **Timing:** 10 weeks before expected event (not before 18-20 weeks)
 - ✓ **Method:** measuring the optical density of AF against wave length 450 nm & also L/S ratio
- ⇒ **Liley's chart:**
 - ✓ **Low zone** → repeat every 3wks (cord Hb → 12-16 gm/dl)
 - ✓ **Mid zone** (cord HB 8-12 gm/dl)
 - ✓ **Low mid** → repeat every 2 weeks & high mid » repeat every 1 weeks
 - ✓ **High zone** → mature » terminate & if immature » intrauterine blood transfusion
- ⇒ **Percutaneous umbilical cord blood sampling (PUBS):**
 - ✓ **For:** blood group, RH, HB, bilirubin, direct coomb's, reticulocytes.
- ⇒ **Others:**
 - ✓ **Assessment** of fetal wellbeing
 - ✓ **X ray:** Buddah position in hydrops fetalis

Treatment

❖ **Prophylaxis (RhoGAM):**

- ⇒ **Time:** within 72 hours of labor (also a small dose is given at 28 wks)
- ⇒ **Method:**
 - ✓ **Standard dose:** 300 µg, sufficient for most deliveries
 - ✓ **Small dose:** 50 µg, if pregnancy less than 13 weeks.
 - ✓ **Correct dose:** Kleihauer- Betke test, if massive transfer.

❖ **Curative:**

- ⇒ **According to Liley's chart:**
 - ✓ **Low zone** → repeat every 3 weeks (cord HB more than 12 gm/dl)
 - ✓ **Mid zone** » low mid » repeat every 2 weeks & high mid » repeat every 1 weeks
 - ✓ **High zone** » mature » terminate & if immature » intrauterine blood transfusion

❖ **Delivery:**

- ⇒ **Time:** maturity (> 34 weeks), high zone or fetal HCV < 30%
- ⇒ **Method :** CS (safer) or Vaginal delivery (with low threshold CS)
- ⇒ **Care of neonate**
 - ✓ **Cord blood:** blood group, RH, HB, bilirubin, direct coomb's,
 - ✓ **Phototherapy** (converts bilirubin to nontoxic compound)
 - ✓ **Exchange blood transfusion**

❖ **Other lines:**

- ⇒ Phenargan to inhibit hemolysis
- ⇒ Plasmapheresis
- ⇒ Desensitization (repeated injection of husband RBC's)
 - ✓ Rh +ve erythrocyte membrane in enteric-coated capsules

❖ **Bone marrow transplantation**

Hyperemesis gravidarum

Complaint

She was admitted because she has severe attacks of vomiting of () duration

History of present illness

- ❖ Frequency of vomiting كم مره بترجي في اليوم
- ❖ Amount of vomiting والكميه قد ايه
- ❖ Color of vomiting ولونها ايه
- ❖ Relation to meals وقبل ولا بعد الكل
- ❖ Time of vomiting in the day صباحا ولا مساء ولا طول اليوم
- ❖ Affection of general condition وهل الترجيع اثر على صحتك (خسيتي- عينك اصفرت)

Investigations done

Treatment received

Hyperemesis gravidarum sheet

Complaint

She was admitted because she has severe attacks of vomiting of 2 days duration.

History of present pregnancy

The patient knew that she is pregnant after missing a period, she isn't sure of dates. Pregnancy test was done to her & its result was +ve.

In the beginning of 1st trimester the patient started to experience normal symptoms of early pregnancy in the form of nausea, vomiting, increased frequency of micturition and longing.

At the beginning of the 3rd month, the patient started to feel attacks of severe vomiting, with high frequency (5times/hour), small amounts of fluids, not related to meals & all over the day & night. This vomiting affects her general condition by causing her to be drowsiness, irritable & decreasing in weight due to dehydration. So she sought medical advice in a private clinic where she took IV fluids with Primperan in it & Cortigen I.M & symptoms was transiently relieved, then increased after one day but with more severity, so she sought medical advice at Eldemardash hospital where she was admitted for 7 days. She had IV fluids (glucose, saline & Primperan) & Cortigen I.M and without oral nutrition, until the symptoms was relieved and she began to recover, where she was allowed to eat small amounts of CHO food in multiple frequencies. On exit she was advised to continue on this way of feeding. Oral ante emetic drugs were given to her.

Yesterday the symptoms of vomiting regained to her, so she sought another medical advice at Eldemardash hospital, where she was admitted.

The 1st trimester passed without any, bleeding, discharge or pain.

On systematic review, the patient has no GIT symptoms, urinary tract complications, cardiac manifestations or chest problems.

In the hospital, she had the following investigations done (U/S, CBC, RH, kidney & liver function tests, urine volume was calculated, urine culture, Na⁺ & K⁺ levels in serum & blood sugar to exclude DM.), with no reports available.

Diagnosis

33 year old lady, P2+0, not sure of her dates, not in labor, and she has hyperemesis gravidarum.

Questions

What are the causes of vomiting in pregnancy?

- ❖ Morning sickness, Hyper emesis Gravidarum
- ❖ EP, VM, PET, PHA, PYELONEPHRITIS
- ❖ Liver diseases as acute fatty liver.
- ❖ Red degeneration in a fibroid, twist of ovarian cyst.
- ❖ Associated medical (as food poisoning) or surgical (as appendicitis) conditions.

What are the causes of hyper emesis gravidarum?

Multi factorial without clear etiology

- ❖ **More in PG & multiple pregnancy**
- ❖ **Psychological theory:** more neurotic patient with psychic troubles.
- ❖ **Allergic:** May respond to corticosteroids.
- ❖ **Hormonal:** ↑HCG, Estrogen. ↓ progesterone and corticosteroids
- ❖ **Deficiency** of vitamins particularly B1.

What are the investigations done for such case?

- ❖ **Urine analysis** for Chlorides, albumin, ketone bodies.
- ❖ **Kidney function tests:** Creatinine, urea, uric acid.
- ❖ **Liver functions:** SGOT, SGPT, alk. phosphatase, bilirubin
- ❖ **Serum electrolytes:** Na, K.,
- ❖ **ECG**
- ❖ **U/S** to document pregnancy, **exclude V.M, Twin, ectopic**

What is the treatment of a case of hyperemesis gravidarum?

⇒ **Conservative:**

- ✓ **Hospitalization**, isolation & total parenteral nutrition till 48 hrs after vomiting stops
- ✓ **Antiemetics:**
 - Metochlopramide = dopaminic antagonist [primperan, Plasil)
 - Dioperidol = Apomorphine antagonist

⇒ **Follow up:**

- ✓ **Vital data:** P, T, BP
- ✓ **Fluid chart:** Input (fluids given), Output [urine + Vomitus]
- ✓ If patient responded TPN is stopped 48 hrs after vomiting stops and small solid meals are started.

⇒ **Indications of termination:**

- ✓ **Persistence of:** vomiting, Tachycardia > 100/min, Hypotension < 100 mmHg systolic, Fever > 38°C in spite of treatment.
- ✓ **Absence of** chlorides in urine.
- ✓ **Progressive** renal, liver, CNS, or retinal affection in spite of TTT.

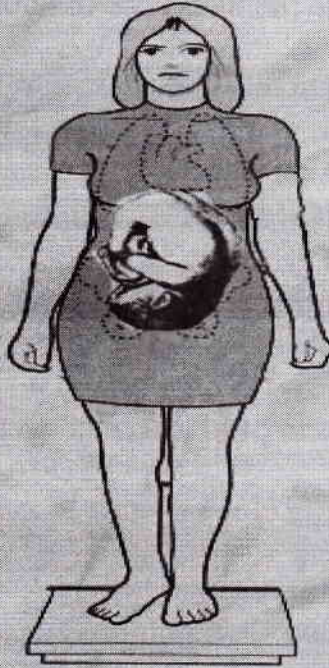
⇒ **Method of termination:**

- ✓ **Before 12 weeks:** suction evacuation
- ✓ **After 12 weeks:** may need hysterotomy due to bad general condition.

Habitual abortion (Issue brief)

Causes:

- Maternal
 - ♣ General
 - ✓ Diseases
 - ✓ Infections
 - ✓ Immunological
 - ✓ Endocrinal
 - ♣ local
- Fetal



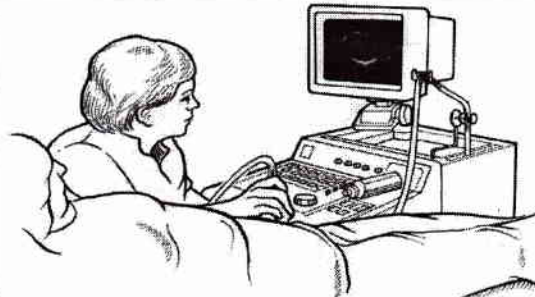
Symptoms:

- ♣ OCD
- ♣ Number of abortions
- ♣ Pattern of abortion
- ♣ Histological examination of the conceptus
- ♣ If the patient has a threatened abortion now.
(As APH)
- ♣ Fetal movements
- ♣ Cusco's examination

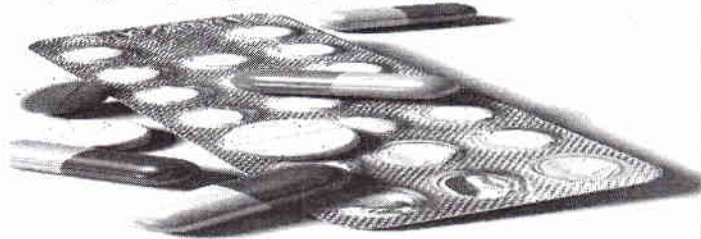
Complications:

- ♣ Anemia
- ♣ Blood transfusion

Investigations: Blood sugar, kidney function tests, thyroid function tests, HSG, US



Treatment: Previous intake of folic acid, aspirin, heparin, cerclage



Habitual abortions

Personal history

- ❖ Age (increase age increase the incidence of abortion)
- ❖ smoking

Complaint

She is pregnant () month and she is coming for antenatal care as she has habitual abortion (or IUFD OR Bleeding)

History of present illness

Cause

- ❖ Maternal: Trauma, intercourse, any advanced medical disorder (diabetes, thyroid dysfunction, renal disease, hypertension, RH typing)
هل جالك النزيف بعد اصابه او جماع وهل عندك اي مرض (سكر - ضغط)
- ❖ Fetal: Any gross anomalies in products or conception, living or dead
هل الطفل كان فيه اي تشوهات وكان عايش ولا ميت

Clinical picture

- ♣ OCD
- ♣ Number of previous abortions
كم مره سقطتي قبل كده
- ♣ Pattern of abortion (duration: ascending or descending, if preceded by vaginal bleeding or little pain)
عمر الحمل كل مره بيزيد ولا بيقل
- ♣ Histological examination of the conceptus
هل حللتني انسجه السقط
- ♣ If the patient has a threatened abortion now: Color & amount of the blood and if associated with blood clots & if there is any apparent cause.
كميه الدم وهل فيه حثت زي الكبد ولونه ولو معه الم وهل هناك سبب واضح
- ♣ Fetal movements (if felt)
هل بتحسي بلعب الطفل
- ♣ Cusco's examination for any local cause.
هل اتفحصتني بمنظار مهبل

Complications

- ♣ Anemia, Blood transfusion
هل النزيف سببك انيميا (فقر دم) او انتقلك دم

Investigations

Blood sugar, kidney function tests, thyroid function tests, HSG, US

عملتي اختبارات ايه (وظائف كبد وكلية وغده درقيه) - اشعه بالصبغه - سونار

Treatment

Previous intake of folic acid, aspirin, heparin, circlage

بتاخدي علاجات ايه؟؟ (حمض الفوليك - اسبرين - هيبارين - ربط لعنق الرحم)

N.B. assessment of a case of habitual abortion

History as above

Examination

- ♣ General: medical disease
- ♣ Abdominal: swelling as fibroid uterus, ovarian swelling
- ♣ Local:
 - ❖ Uterus: small (hypoplastic), RVF, Bicornuate
 - ❖ Cervix: short, tear (patulous internal os)

Investigation

1- General cause:

- ❖ Endocrine: GIT (DM), thyroid function test
- ❖ Immunological: SLE, APS, HLA antibodies, antisperm antibodies
- ❖ Diseases: renal, liver, heart
- ❖ Infection: serum (toxoplasmosis), C&S

2-Local causes:

- ❖ If pregnant ...U/S (better transvaginal)
- ❖ If not pregnant: HSG, Hysteroscope ...uterine malformation
- ❖ LPDD&C, serum progesterone, vaginal cytology

3-Fetal causes:

- ❖ Genetic & Chromosomal studies (fetus & parents)
- ❖ Histopathological examination of the abortus

Treatment

- ❖ General cause ...special treatment.
- ❖ Local cause: special treatment (circlage).
- ❖ If no cause is found (very common).

1	Preconceptionalcorrect any detected cause
2	During pregnancy ...general instructions as more periods of rest, no traveling or intercourse, good diet, vitamins, iron, stop smoking & alcohol. Folic acid 3 months before conception to be continued in the 1 st trimester
3	Empirical drugsprogesterone ,low dose aspirin ,heparin

Habitual abortion sheet

Personal history

As before

Complaint

She's pregnant at 14th weeks coming for antenatal care as she had 3 previous successive abortions.

History of present pregnancy

She's pregnant at 14th week, 1st day of the last menstrual period (LMP) was on 2/6/2005. Her expected date of delivery (EDD) will be on 9/3/2006. The patient knew that she is pregnant after missing a period & started to experience symptoms of early pregnancy in the form of nausea, vomiting increase in the frequency of micturition & longing. 10 days later pregnancy test was done in urine & appeared to be +ve, then U /S is done afterwards to confirm the diagnosis.

Her 1st trimester passed smoothly; there was no symptoms of hyperemesis gravidarum, or threatened abortion (vaginal bleeding associated with lower abdominal pain), or lower urinary tract infections (dysuria & suprapubic pain), or upper urinary tract infections (loin pain, rigors, fever. vomiting), or even abnormal vaginal discharge. She has not perceived fetal movements until now. Her 1st abortion was 3 y ago at 10 weeks gestation

started by vaginal bleeding for which she sought medical advice and surgical evacuation was done. Second abortion was 2 years ago which occurred at 20 weeks of gestational age, when she noticed sense of heaviness, leucorrhea followed by gush of fluids per vagina then the fetus had passed. The patient sought medical advice & removal of the placenta was done. In the current pregnancy the patient had done US, blood & urine tests but no reports are available. Circlage was done 2 w ago. Review of other body systems revealed no abnormality.

Diagnosis

PO+2, 14 weeks, with habitual abortion mostly cervical incompetence, circlage in place admitted for examination & further investigation.

ANOTHER EXAMPLE

Personal history

As usual

Complaint

Vaginal bleeding of 4 days duration

Menstrual history

As usual

History of present pregnancy:

The patient is now pregnant at 10weeks and is complaining of vaginal bleeding in the form of brownish spots of 4 days duration, the bleeding is moderate in amount with no history of bright red bleeding or passage of blood clots or passage of products of conception, the bleeding was associated with mild lower abdominal colicky pain radiating to the back, no history of UTI as frequency, urgency, dysuria or hematuria, no symptoms suggestive of hyperemesis gravidarum, the patient sought medical advice where U/S was done for her and she was diagnosed as threatened abortion, the patient was told to rest in bed and was prescribed profenid rectal supp, twice/day and uterogestan capsules 3times/day, one day ago the bleeding become more severe and bright red in color but no history of passage of blood clots or passage of products of conception, the patient was admitted to the hospital where U/S was done for her revealing fetal life negative and she is now waiting for evacuation .

QUESTIONS

What is the incidence of abortion?

- 15-20% of pregnancies but the actual incidence is 50 -75% but most of them occur too early to be detected clinically

What are the clinical types of abortion?

- ♣ **Spontaneous:** Threatened, inevitable, incomplete, complete, missed & septic abortion
- ♣ **Recurrent**
- ♣ **Therapeutic & Elective**

How to know the etiology of the habitual abortion from history?

- Menstrual history:

- ❖ Premenstrual spottingCLI
- ❖ Menorrhagiafibroid
- ❖ HypomenorrheaAsherman \$

- Obstetric history

- ❖ Descending pattern ...patulous os
- ❖ Ascending pattern ...hypoplastic uterus
- ❖ Fresh (local cause) ...macerated (maternal)...fresh (fetal)
- ❖ Easy smooth painless abortion >12 weekspatulous os

- Past history of any maternal disease

How to suspect Anti-phospholipids syndrome

- History of recurrent thrombosis, PET, IUGR
- History of ≥ 3 abortions less than 10 weeks of unknown etiology
- Confirmation by Anti-cardiolipin antibody, Anti-lupus anticoagulant

Is anti-phospholipids titer accurate?

No, they have high false +ve

How to treat antiphospholipid antibody syndrome?

Combination of aspirin 75 mg & heparin (clexane)

Does toxoplasmosis cause habitual abortion?

No, it causes abortion only once:

- Acute infection with the full clinical picture
- Rising IgM titer

When to remove it earlier?

If contractions occurred, PROM, infections or any associated cause necessitates early termination

What are the other rare causes of bleeding in early pregnancy?

- **Long gynecological causes** ...as ulcers, polyps, HPV, tumor.
- **Hartman's sign** ...scanty spotting at time of implantation.
- **Decidual hemorrhage** ...monthly scanty bleeding at time of menses.

What are the causes of habitual abortion?

- ❖ **Fetal causes** as chromosomal abnormalities.
- ❖ **Maternal causes:**
 - General:** diseases (PET, renal), infections, immunological & endocrinal.
 - Local:** as patulous Os or uterine malformations.

What are the investigations done for habitual abortion?

- ❖ **General:** Renal function test, liver function tests & CBC. Cultures for Chlamydia, serum titers for \$, toxoplasma, Antisana, Anticardiolipin, lupus anticoagulant. Thyroid function tests, blood glucose, progesterone level.
- ❖ **Local:** HSG, US.
- ❖ Karyotyping & histopathological ex of the aborted material.

What are the sure signs of pregnancy?

- Inspection of fetal movement
- Palpation of fetal movement
- Palpation of fetal parts
- Auscultation of fetal heart sounds
- Ultrasonography to visualize the fetus

Q: What is the D.D of spontaneous abortion?

Ectopic pregnancy - hydatidiform mole - metropathia hemorrhagica - cx lesions that bleed in pregnancy as polyps.

In approximately how many early pregnancies do the common signs & symptoms of spontaneous abortion (pain & vaginal bleeding) occur?

How many of these pregnancies will be spontaneously aborted?

What is the management of case of habitual abortion?

- ❖ **Treatment of the specific cause.**
- ❖ Ovum transfer or AID in chromosomal abnormalities.
- ❖ Cerclage in local causes.
- ❖ Myomectomy in fibroid uterus.
- ❖ Strassman's operation in septate or bicornuate uterus.

What are the types of circlage?

- ♣ **Vaginal:** Modified Shirodkar & Mc Donald.
- ♣ **Transabdominal.**

What is the prognosis of a case of abortion?

- ♣ Some abortions shouldn't be prevented e.g. chromosomal abnormalities.
- ♣ **Prevention:**
- ♠ Early treatment of diseases as progesterone in LPD.
- ♠ cerclage in cervical incompetence.
- ♣ The incidence of 1st trimesteric abortion after.
- ♠ 1 abortion is 24%.
- ♠ 2 abortions is 26%.
- ♠ 3 abortions is 32%.

What is the management of Missed abortion with DIC?

Treat the DIC 1st till fibrinogen > 100mg/dl then evacuation.

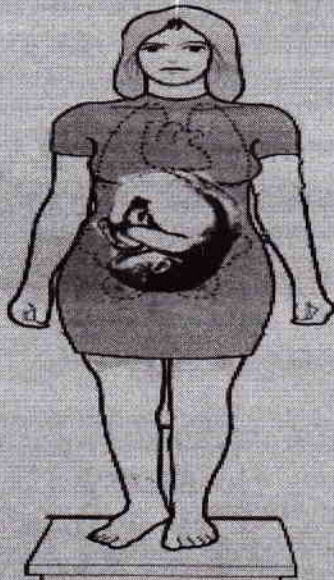
What is the management of septic abortion?

- ♣ Correction of the general condition with antibiotics.
- ♣ Evacuation of the contents with close observation.
- ♣ Treatment of the complications.

Rupture of membranes (Issue brief)

Causes:

- Trauma
- Vaginal infection
- Uterine contractions.



Symptoms:

- Sudden gush of watery fluid per vagina $\pm$ blood)

Complications:

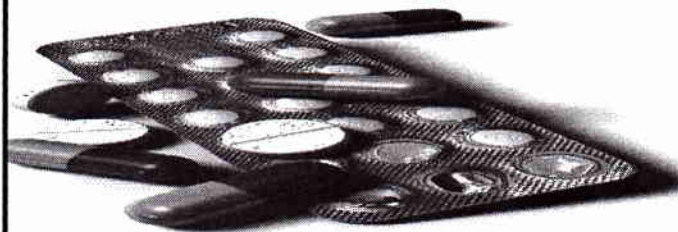
- ✓ Chorioamnionitis
- ✓ Abdominal pain & uterine contractions
- ✓ Decreased fetal movement

Investigations:

- Cusco or digital examination
- blood tests



Treatment:



Rupture of membranes

Causes

- Trauma, vaginal infection or uterine contractions.

هل نزلت المياه بعد اصابه او التهابات او طلق

Clinical picture

- Rupture of membrane (sudden gush of watery fluid per vagina $\pm$ blood)

هل دفقت عليكي مياه زي مياه الحنفية وغرقت رجلكي والارض

Complications

- ♣ Chorioamnionitis
- ♣ Offensive vaginal discharge
- ♣ Abdominal pain & uterine contractions
- ♣ Decreased fetal movement

هل سخنتي

هل نزلت عليكي افرازات ريحتها وحشه

بتحسي بمغص وطلق

لعب الطفل كويس ولا قل

Investigations

- Cusco or digital examination, blood tests & US

هل اتعملك منظار مهبلي او فحص او تحاليل دم او سونار

Treatment received

- Antibiotics, corticosteroids

هل اخدتي مضاد حيوي وحقن الكورتيزون لنمو رثه الجنين

Rupture of membranes sheet

Complaint

She's pregnant at 9th month coming for antenatal care as she had repeated attacks of watery vaginal discharge.

History of present pregnancy

She's pregnant at 35th week, 1st day of the last menstrual period (LMP) was on 2/6/2005. Her expected date of delivery (EDD) will be on 9/3/2006. The patient knew that she is pregnant after missing a period & she started to experience symptoms of early pregnancy (1st trimester) in the form of nausea vomiting, increase frequency of micturition & longing. Pregnancy test was done in the 6th week (after last menstrual cycle) & it was +ve.

1st trimester passed uneventfully without any symptoms of hyperemesis gravidarum, bleeding, watery discharge or pain. US wasn't done to her.

In the 2nd trimester the patient started to feel symptoms of late pregnancy in the form of abdominal enlargement, her 1st fetal kick (quickening) was felt in the beginning of the 16th week & they were & still felt up till now being satisfactory. Then the 2nd trimester passed uneventfully without any vaginal bleeding, discharge, headache, edema, blurring of vision or epigastric pain.

In the 3rd trimester the process of labor passed normally till the beginning of the 7th month where she felt an attack of vaginal discharge, which was

watery in nature, small amount, translucent in color, with no odor & didn't affect her general condition. This attack wasn't accompanied by fever or decrease in Abdominal size & fetal movement wasn't affected (>10/day), she went to a private clinic where she had US revealed normal alive baby & average liquor. She was advised by administering systemic antibiotics in the form of I.M. injection & she was improved. 5 weeks ago (end 30th week gestation) the patient felt attack of sudden gush of watery fluid from the vagina, the fluid was translucent, odorless, of large amount that led to decrease in her abdominal size, so the patient sought medical advice at ElDemerdash hospital where she was admitted.

In the hospital the patient had speculum examination to confirm watery discharge & US to assess fetal life. The fetus was alive & his heart rate was 143 beats/min. & there was no CFMF. There was decrease in amount of liquor.

She had also culture & sensitivity tests which were -ve, she had ESR & C reactive protein analysis, which were normal confirming no infection. She had liver & kidney function tests, which were normal

She had blood groups & RH analysis, which revealed that she is RH -ve & her husband analysis revealed RH +ve. They had to do analysis to their daughter which was luckily RH -ve. Her leucocytic count is 7000. The patient is under medical care with bed rest, sterile dressings, with observation to her temperature every 2hrs. Fetal kicks also are assessed every 12hrs

On systematic review, the patient has no GIT symptoms, urinary complications, cardiac manifestations or chest problems.

Diagnosis

21 yr old lady, GA 35+4 weeks by dates, cephalic, not in labor and has PROMs.

Questions

What is the premature rupture of membrane?

Disruption of fetal membranes before the onset of uterine contractions by >1 hr

What is the preterm premature rupture of membrane?

Disruption of fetal membranes before the onset of uterine contractions by >1 hr before completing 37th week

What is the prolonged premature rupture of membrane?

>24 hours

What is the incidence of PROM?

5-15%

Does PROM occur more frequently at term or preterm?

❖ **Idiopathic & Previous history**

❖ **Exogenous**

⇒ **Infections**: (GBS is the most common), UTI, **Gardnerella Vaginalis**, Chlamydia, Gonorrhea, Ureaplasma Urealyticum, Mycoplasma & Bacteroids.

⇒ **Trauma & Nutritional** (↓vit. C) & Smoking

❖ **Endogenous**

- ⇒ PHA & Abruptio placenta
- ⇒ Incompetent Cx & Weak collagen
- ⇒ Mal-presentation & mal-position

What is a dye test?

What is the expectant management of PROM?

- ❖ **Prophylaxis**: avoid the risk factors
- ❖ **Conservative** (26-34 (35 or 36) wks), no infection & the patient is not in labor.
 - ⇒ **Bed rest, good Diet, Sedatives. Observation** (fever chart/4 hrs), TLC, CRP, ESR & AFI
 - ⇒ **No PV examination** and treat local infections, if Circlage in place → remove.
 - ⇒ **Prophylactic antibiotic therapy: penicillin-G** (Clindamycin in penicillin allergy)
 - ⇒ **Corticosteroid administration**: only if no immediate signs of infection are present.
 - ⇒ **Tocolysis**: reserved for cases in which transport to a medical center is necessary, or to delay delivery for 48 hours for steroids action.

What is the active management of PROM?

- ❖ Termination
- ❖ Indications: as usual + infection
- ❖ Method either vaginal or CS
- ❖ Care of the neonate

What are the maternal & fetal symptoms & signs that suggest Chorioamnionitis?

FAHM+ abdominal tenderness+ foul offensive discharge + fetal & maternal tachycardia

Why are tocolytics in preterm PROM controversial?

Because preterm labor here is an attempt of the uterus to expel the fetus from a potentially infected environment

What role do antibiotics play in the treatment of PROM?

What is the treatment of Chorioamnionitis?

- ❖ Antibiotics
- ❖ Termination
 - ♣ Vaginal preferred
 - ♣ CS in fetal distress or associated indication
- ❖ Care of the neonate.
- ❖ Ttt of the complications.

What are the benefits of steroids in PROM?

Decrease RDS- intraventricular hemorrhage & necrotizing enterocolitis.

What are the complications of PROM?

- ❖ **Maternal**: prolonged labor spread of infection, DVT.
- ❖ **Fetal**: distress, death, Infection, preterm labor, prolonged oligohydramnios.

What are the other causes of acute abdomen with pregnancy?

- ♣ Accidental hemorrhage, rupture uterus, acute polyhydramnios.
- ♣ Complicated ovarian cysts (ruptured corpus luteum cyst or theca lutein cyst of vesicular mole).
- ♣ Complicated fibroid (red degeneration).
- ♣ Urinary ...cystitis, pyelonephritis, stones (renal colic).
- ♣ GIT ...gastroenteritis, viral hepatitis, food poisoning.
- ♣ Surgical ...acute appendicitis, acute cholecystitis, perforated PU.
- ♣ Medical ...DKA, sickle crisis, acute porphyria, mesenteric a. occlusion.

How to improve the chance of survival of the baby in preterm labor?

- Prolongation of pregnancy by tocolytics, enhancing lung maturity by steroids
- If delivery is inevitable s, avoid fetal birth injuries & attendance of good neonatologist.

What are could do in next pregnancy?

The recurrence rate is about 40% so she will have extra-prophylactic care; however, there is controversy about the efficacy of most prophylactic lines of management.

How do steroids act?

- **Action** : enhance fetal release of surfactant, Surfactant s are 6 types is secreted by type II alveolar pneumocytes under the control of fetal adrenal cortical activity, decrease surface tension & prevent collapse & atelectasis.
- **Advantages**: decrease perinatal mortality rate (30%), respiratory distress syndrome (50%), periventricular leukomalacia (70%) & necrotizing enterocolitis.
- **Contraindication** (relative): DM, hypertension & PROM.
- **Route** (IM better than IV).
- **Dose**: Betamethasone ...12mg twice 24 hours apart.
Dexamethasone6mg/12 hour for 4 doses.
- **Duration**: from 2834 weeks (not before or after).
- **Methods**:
 - ♣ **multiple** (repeated weekly) as steroids act for 7 days
 - ♣ **single dose** ...recently approved (no beneficial effect from repetition & to decrease its side effects).

How to assess lung maturity?

History:

For proper measurements of EDD, there must be

- ♣ The patient is sure of her dates
- ♣ At least previous 3 regular cycles
- ♣ The last cycle must be of average amount & duration
- ♣ No hormonal contraception for the last 3 months before pregnancy

Clinical

Fundal level & fetal weight corresponding to period of amenorrhea

Investigation:

- ✦ U/S: amniotic fluid turbidity ,placenta grade III
- ✦ Amniocentesis :
 - ❖ L/S ratio >2, phosphatidyl glycerol
 - ❖ Bubble stability test (shake test)
 - ❖ Nile blue sulfate test
 - ❖ Creatinine concentration >2mg%

How to exclude other causes of vaginal discharge?

- ❖ Urine characteristic odor & color, as SUI may occur in pregnancy
- ❖ Show ...plug of mucus with slight blood
- ❖ Infection ...change in the normal odor ,color amount
- ❖ Chronic decidual disruption... increase RBCS

How to confirm ROM?

- ❖ See fluid directly by sterile Cusco speculum trickling from the cervix, pooling of liquor in the posterior fornix or meconium in the vagina.
- ❖ U/S for AFI
- ❖ Usually not done ...Amniography ...dye appears in a vaginal pack

How to induce labor?

- ❖ According to Bishop score
- ❖ Drugs: Oxytocin or Prostaglandins (more potent & less safe)
- ❖ If membranes were till present (stripping of the membranes)
- ❖ usually after AROM ...uterine contractions will start
- ❖ if not started within 1 hour ...oxytocin drip

Q: What is Bishop Score?

<u>Factors</u>	<u>Rating</u>			
	0	1	2	3
<u>Dilation</u>	Closed	1-2 cm	3-4 cm	5 cm +
<u>Effacement</u>	0-30%	40-50%	60-70%	80%+
<u>Station</u>	-3	-1,-2	-1,0	+1,+2
<u>Consistency</u>	Firm	Medium	Soft	-
<u>Position</u>	posterior	middle	Anterior	-

Q: How to avoid spread of infection?

- ❖ Prophylactic antibiotics
- ❖ VD is safer than Cs ...although VD is more time consuming
- ❖ If CS must be done : pack paracolic gutters +/- extraperitoneal CS

Q: What are the complications of chorioamnionitis?

Local	General	Organ affection
1-Endometritis 2-Myometritis 3-Salpingitis 4-Parametritis 5-Pelvic peritonitis 6-Pelvic abscess	1-Septic thrombophlebitis 2-Systemic pyemia 3-Generalized peritonitis	1-septic shock ,Ads 2-Acute hemolysis +/- liver function ...jaundice 3-DIC 4-Renal failure due to the above factors

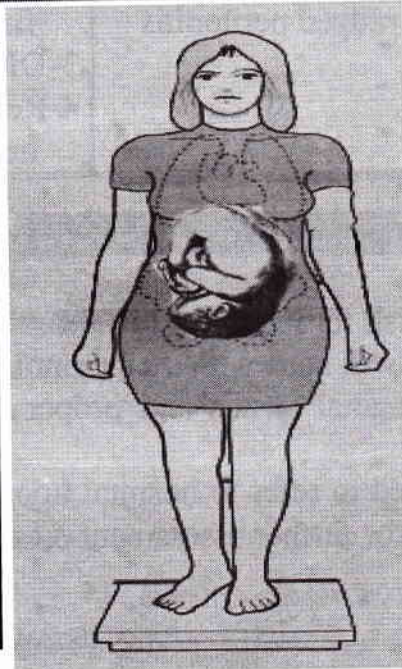
How to manage the patient in the next pregnancy?

- ❖ She will become high risk for recurrent PROM
- ❖ Screening for infection will start with the beginning of the next pregnancy by repeated cervico vaginal swabs and proper ttt acc to results of the smears
- ❖ The patient will be noted to refer to hospital upon any change in the character of her discharge for further assessment & early management

Polyhydramnios (Issue brief)

Causes:

- Excessive abdominal enlargement
- If there are twins
- Malformations of the baby
- Infections
- Abnormalities of the placenta
- History of DM
- Rh incompatibility



Symptoms:

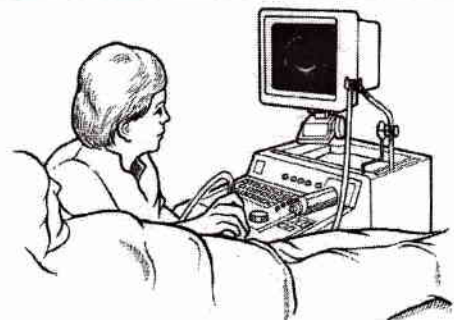
- Pressure symptoms
- Rate of symptoms
- Nausea & vomiting

Complications:

- Pre term labor
- Rupture of membrane
- Preeclampsia

Investigations:

- ❖ Routine
- ❖ Investigations of DM
- ❖ US



Treatment:

- NSAID
- Amnioreduction



Polyhydramnios

Causes

- Excessive abdominal enlargement هل بتحسي ان بطنك اكبر من اي حمل سابق
- If there are twins هل فيه دكتور كشف عليكى وقالك انك حامل في توأم
- Malformations of the baby او ان الطفل في عيوب خلقيه
- Abnormalities of the placenta with routine US او ان هناك عيوب في المشيمه
- History of DM & Rh incompatibility او عندك السكر
- Infections during pregnancy او جاتلك التهابات تكون اثرت على الطفل

Clinical picture

- ❖ Rapidly progressive within few days هل بتحسي ان بطنك بتكبر بسرعه
- ❖ Pressure manifestations:
 - Severe abdominal pain بتحسي بالم في البطن
 - heaviness - dyspnea - palpitation - lower limb & abdominal wall edema بتحسي بنقل مع صعوبه في النفس والهضم وتورم بالقدمين
 - Nausea and vomiting نفسك بتغم عليكى وبترجعي؟؟

Complications

- Preterm labor هل بتحسي بمغص وطلق
- Rupture of membrane مياه دقت عليكى
- Preeclampsia بتحسي بصداع وزغلله والم في فم المعده

Investigations

- ❖ Routine, investigations of DM, US عملتي اختبارات السكر وسونار وايه كمان

Treatment

- ❖ NSAID, amnioreduction بتاخدي علاج لبوس او اقراص – عملتي بذل للسائل الامنيوسي

Questions

What are the causes of polyhydramnios?

❖ **Maternal causes:**

- ⇒ As a part of **generalized edema** due to Heart failure or Nephrotic syndrome
- ⇒ **DM** (3 causes), **Pre-eclampsia**, **Rh sensitization** causing fetal anemia

❖ **Fetal causes:**

- ⇒ **Idiopathic 16 – 66%**, Twin to twin transfusion, infections (STORCHEB), neuromuscular incoordination & Hydrops fetalis
- ⇒ **Congenital malformations**

Open neural tube defect Anencephaly & spina bifida

Obstructive GIT abnormalities: Esophageal atresia – Duodenal atresia

Malformations of the kidney : → Congenital nephrosis

- ⇒ **Large placenta, knots of the cord & Chorioangioma PHA in 50% of cases.**

What is the incidence of polyhydramnios?

• 0.2 - 1.6 %

What are the investigations of polyhydramnios?

❖ **Investigations for the cause :**

- ⇒ Tests for **DM**
- ⇒ Karyotyping.

❖ **U / S (or X - ray):**

- ⇒ **Cause:** malformations, fetal life, multiple pregnancy
- ⇒ **Diagnosis:** AFI
- ⇒ **To evaluate the position and the presentation** of the fetus & fetal

wellbeing

What are the complications of polyhydramnios?

❖ **Maternal complications:**

⇒ <u>During Pregnancy</u>		
• Abortion, PTL • Pre-eclampsia (25%) • Pressure symptoms • Mal-presentations & Non – engage-ment		• <u>Ante-partum hemorrhage:</u> <u>Placenta previa</u> with large placenta <u>Abruptio placenta</u> with rapid drain- age of liquor
⇒ <u>During Labor</u>		
1 st stage	2 nd stage	3 rd stage
• PROM • Cord prolapse • Arm prolapse • Infection • Inertia	Obstruction due to mal- presentation	• Retained placenta • Atonic PPH • Puerperal sepsis • Sub-involution • Splanchnic shock

❖ **Fetal complications**

- ⇒ **Prematurity**
- ⇒ **Congenital malformations** before lactation the fetus is examined for malformations and a rubber or plastic tube is passed down the esophagus to detect atresia or tracheo-esophageal fistula

What are the treatment options of polyhydramnios?

<u>Acute PHA</u>	<u>Acute PHA</u>
<u>AROM</u> with <u>slow drainage of the amniotic fluid:</u> {to avoid Splanchnic shock - <u>Abruptio placenta</u> - Sudden alteration in fetal position - cord Prolapse}	<u>Perform U / S:</u> <u>CFMF:</u> →TOP <u>No CFMF:</u> →Conservation

❖ **Indications of termination of pregnancy:**

- ⇒ **No response to treatment or marked pressure symptoms**
- ⇒ **Congenital fetal malformation or acute polyhydramnios**
- ⇒ **Fetal distress or mature fetus** or If the patient is in labor

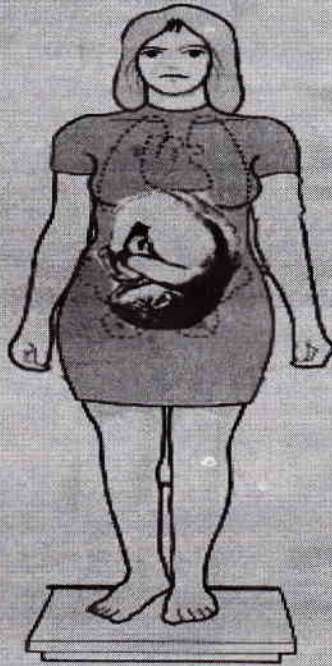
❖ **The conservative treatment:**

- ⇒ **Bed rest** on one side, Treat cause, sedatives at night
- ⇒ **Symptomatic treatment** for dyspnea, and abdominal discomfort
- ⇒ **Amnio-reduction:** frequent removal of $\approx 1.500 - 2.000$ ml every 1 - 3 wks
- ⇒ **Indomethacin:** decrease amniotic fluid by decrease fetal urine production.

Ectopic pregnancy (Issue brief)

Causes:

History of sexually transmitted diseases
Tubal surgery, ART, minipills or post-coital contraception
Presence & absence of pelvic pressure symptoms (4D).



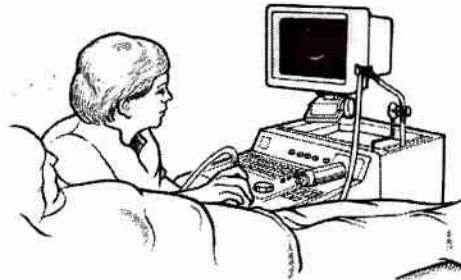
Symptoms:

History of missing a period
Analysis of pain, character of bleeding.
History of fainting attacks

Complications:

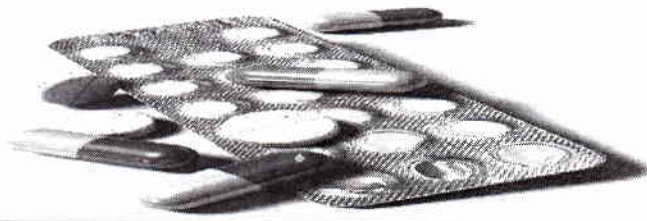
Investigations:

- US
- HCG



Treatment:

- Methotrexate



Ectopic pregnancy sheet

- The sheet is only described in the 1 st trimester

Cause

- History of sexually transmitted diseases, tubal surgery, ART, minipills or postcoital contraception
هل جالك التهابات قبل كده او عملتي اي عمليه في الانابيب او اطفال انابيب – استعملتي ايه من وسائل منع الحمل (لولب اقراص)
- Presence & absence of pelvic pressure symptoms (4D).
هل بتحسي بتقل مع صعوبه في البول او البراز

Clinical picture

- History of missing a period, analysis of pain, character of bleeding.
- History of fainting attacks
آخر مره جاتلك دوره امتي وهل بتحسي بالم ونوعه ايه وهل اغمي عليكي

Investigations done

- US, HCG
هل عملتي سونار وهل عملتي اختبار حمل

Treatment received

- Methotrexate (regimen)
اخذتي ايه علاجات وهل اخذتي حقن والجرعه ازاى

Questions

Define Ectopic pregnancy.

Pregnancy outside its normal site which is inside the endometrial cavity

Why the incidence has increased in the last years?

- 1- Increase the incidence of sexually transmitted diseases & better antibiotics.
- 2- Increase in the use of progesterone containing contraceptives (progesterone only pills, progesterone containing IUD, postcoital contraception).
- 3- Increase the utilization of ART.

What are the laboratory findings in ectopic pregnancy?

- ❖ If the diagnosis is evident proceed to **laparotomy**, if not **do laparoscopy (diagnostic & therapeutic)**
- ❖ **β-HCG:** earliest diagnosis of pregnancy at 10 m iu/ml.
⇒ 1wk post-fertilization.
⇒ Normally doubles every 36-48 hrs.
⇒ Abnormal rise <66% in 2 days = EP or non-viable IU pregnancy.
- ❖ **US:** at 5th week do TVUS (sac outside the uterus), **DOPPLER** (ring of fire).
- ❖ **Combining β-HCG & US:** Ectopic pregnancy can be diagnosed.
⇒ If: β-HCG > 6000 m iu/ml + empty uterus in trans-abdominal US.
⇒ B-HCG >2000 m iu/ml + empty uterus in trans-vaginal US.
- ❖ **HB & HCV** for acute drop.
- ❖ **Culdocentesis** in pelvic hematocele (false -ve & false +ve).
- ❖ **Serum progesterone:** N > 25ng/ml & if < 5 ng/ml >> abnormal pregnancy
- ❖ **Others (NOT DONE):**
⇒ **D&C**→no villi, Arias Stella reaction.
⇒ **EUA**→ may ↑ the disturbances.
⇒ **X-ray**→hyper-flexed or hyperextended, overlap of maternal & fetal spines in abdominal pregnancy.

What is the discriminatory zone?

- It is HCG level which is 2000 mIU/ml (in conjunction with TVUS) or 6000 mIU/ml (in conjunction with TAUS).

What are the treatment options of tubal ectopic?

❖ **Prophylaxis:** avoid the causes.

❖ **Active treatment**

⇒ **Surgical treatment**

- ✓ **Resuscitation:** (hand-in-hand with the surgical treatment).
- ✓ **Mini laparotomy or laparoscopy (better).**
- ✓ Either **salpingectomy or conservative (linear salpingotomy or salpingostomy or milking)** + peritoneal toilet (in unruptured or single tube).
- ✓ Don't miss to inspect the other tube (**may be unhealthy or congenitally absent**).
- ✓ **Pelvic hematocoele:** Drain by posterior colpotomy or abdominal approach.
- ✓ **In case of abdominal pregnancy:** Laparotomy then.
 - Delivery of the fetus then delivery of the placenta: If attached to unimportant structure remove it.
 - If attached to important structure → cut cord short, antibiotics & Methotrexate & leave for spontaneous absorption.

⇒ **Medical**

- ✓ **Methotrexate** (50 mg / m²) IM OR IN THE TUBE
(If β -HCG doesn't ↓ by at least 15% between day 4 & 7, or 2nd dose is given)
- ✓ **Indications:**
 - Unruptured tube.
 - Good general condition, follow up till HCG becomes <15 mIU/ml
 - HCG < 3000 mIU/ml
 - US: no fetal pulsations, sac <3cm
 - **Follow up:** Surgery is indicated if β -HCG level doesn't ↓ after 3 doses of MTX or the presence of embryonic cardiac activity (high failure rate).
- ⇒ **Others:** (In the sac either laparoscopic or U/S guided).
 - ✓ **Mefiprostone.**
 - ✓ **PGF₂α.**
- ⇒ **Anti D.**

What is the prognosis for patients treated for an unruptured Ectopic pregnancy?

- ❖ Pregnancy after ectopic is 60%.
- ❖ Spontaneous abortion is 10%.
- ❖ Recurrent ectopic 20%.
- ❖ Full term pregnancy 30%.

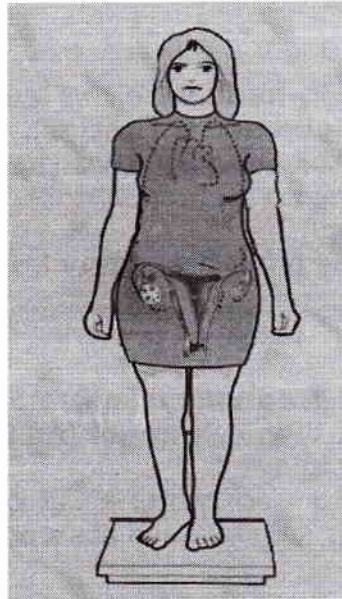
Why ectopic occurred in the right side?

- ❖ Appendicitis & appendectomy is so common

Post & perimenopausal bleeding (Issue brief)

Causes:

- General
- Local
- Conception
- contraception



Symp- toms:

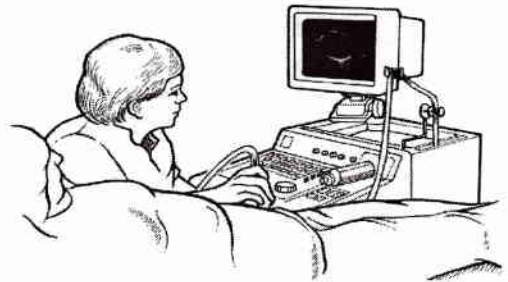
- OCD
- Color
- Clots
- Relation to coitus & menses

Complications:

- Anemia
- Blood transfusion

Investigations:

- ♣ CBC
- ♣ Liver & renal functions
- ♣ D&C



Treatment:

- Medical
- Hormonal
- D&C



Post & perimenopausal Bleeding (abnormal uterine bleeding)

Cause

General: bleeding tendency, liver or renal or cardiac diseases or drugs.

جلدك بيزرق -عندك نزيف من اي مكان ثاني عندك اي مشاكل في الكبد او الكلي او القلب بتخدي اي ادويه؟

Local: infection, trauma, tumors

عندك التهابات او مركبه لولب او حاسه اورام من تحت

Conception: if there was a period of amenorrhea

هل حملتي قبل النزيف او كان عندك فترة الدورة مقطوعه فيها قبل النزيف

Contraception

هل اخدتي اي هرمونات اقراص او حقن او زرع تحت الجلد- وسيلتك لمنع الحمل ايه

Clinical picture

- ♣ OCD. بقاله اد ايه بيزيد ولا بيقل وبدأ ازاي.
- ♣ Color. لونه ايه فاتح ولا غامق .
- ♣ Clots (severity). هل معاه كلاكيع زي الكبد- بتغيري كم فوطه.
- ♣ Relation to coitus. بيحصل بعد الجماع.
- ♣ Relation to menses.

قبل او بعد الدورة مباشره ولا معاها ولا بين الدورتين ولو الدورة انقطعت بقالها قد ايه.

Complications

Anemia, blood transfusion.

هل بتحسي بنهجان ور فرفه في قلبك- عينيك اصفرت- هل عندك مشاكل في الامعاء: امساك او اسهال.

Investigation

CBC, liver & renal functions, D&C.

هل عملتي تحاليل دم او وظائف كبد او كلي او عينه من الرحم.

Treatment

Medical- hormonal- D&C.

خدتي علاجات اقراص او هرمونات ولا غير هرمونات- عملتي عمليات وحيعموليك ايه في المستشفى.

Diagnosis

Age, parity, peri/post-Menopausal bleeding for years, association.

For further examination & investigation.

الشياكه

Perimenopausal bleeding sheet

Complaint

Irregular vaginal bleeding of 3 months duration.

History of present illness

The condition started 3 months ago when the patient noticed a change in the character of her menstrual pattern instead of being regular, of average amount (changing 2 pads/day) for 4 days & cycling every 28 days, it became heavy with passage of bright red blood with dots & the patient changes 6 fully

soaked pads/day & cycling every 20 days. It has no relation to coitus. The patient has inter-menstrual bleeding.

The condition was preceded by a missed period for which the patient had done a pregnancy test which was -ve. U/S showed no abnormality. The condition is not associated with bleeding from other body orifices, or ecchymotic patches. There are no symptoms suggestive of anemia, thyroid abnormalities, hypertension or heart disease. The patient had IUD in place for the last 3 years after her last pregnancy. The attacks are associated with vaginal discharge; whitish, odorless without itching. Also it is associated with lower abdominal colicky pain radiating to the back. There is no history of genital trauma or malignancy (as loss of body weight, right hypochondrial pain, jaundice, chest pain, hemoptysis, headache, blurring of vision). The patient sought medical advice, 3 weeks ago, U/S was done with no available reports. The patient was given medications in the form of tablets, injections of unknown nature with no improvement of her condition. The patient was admitted to ElDemerdash hospital & she is waiting for D&C & further management. Review of other body systems revealed no abnormality.

Menstrual history

(Before the onset of the present condition).

Diagnosis

A 44 years old lady, P3 with meno-metrorrhagia of 3 months duration for further investigations.

Postmenopausal bleeding sheet

Complaint

Recurrent attacks of vaginal bleeding of 3 months duration.

History of present illness

The patient is menopausal for 3 years, but during the last 3 months the patient started to complain of recurrent attacks of vaginal bleeding which is progressive, of moderate amount; patient changes 2 pads/day with no blood clots. The onset of attacks was not associated trauma or drug intake. The condition is not associated with bleeding from other body orifices, or ecchymotic patches. No contact bleeding (It has no relation to coitus). The patient has vaginal discharge; whitish, odorless with itching. No abdominal swellings. There are no GIT symptoms (as recent changes in bowel habits, nausea, vomiting, diarrhea or constipation). There are no urinary symptoms (frequency, dysuria, loin pain, fever & rigors). There is no history suggestive of malignancy (as loss of body weight, right hypochondrial pain, jaundice, chest pain, hemoptysis, headache, blurring of vision). The patient sought medical advice; U/S was done with no available reports. The patient was given medications in the form of tablets of non-specific nature with no improvement of her condition. The patient was ad-

mitted to ElDemerdash hospital & she is now waiting for D&C & further management. Review of other body systems revealed no abnormality.

Menstrual history:

She is menopausal for 3 years.

Diagnosis:

A 55 year old lady, P6 with postmenopausal bleeding of 3 months duration for further investigation.

Postal coital bleeding sheet

Complaint

She complains of vaginal bleeding at the time of intercourse of one month duration.

History of Present Illness

The patient was referred to the hospital from the out patient clinic on 22/4/2000. The condition started one month ago when the patient discovered vaginal bleeding during intercourse suggestive of contact bleeding. The bleeding was accidentally discovered, of gradual onset, progressive in course, bright red in color, with blood clots. The patient changes about two moderately soaked towels per day. The bleeding didn't affect her general condition.

The patient sought medical advice, then D&C biopsy was done and cervical smear was taken revealing :- Inflammatory smear , consistent with cervicitis and metaplastic squamous cells suggesting an underlying cervical ectopy, no dysplasia nor malignancy.

There was history of vaginal bleeding in the form of irregular uterine bleeding 2 weeks ago, of gradual onset, progressive in course, bright red in color, without blood clots. The patient changes about 3 moderately soaked towels per day.

There was a history of vaginal discharge odorless, not associated with itching. The condition was not associated with lower abdominal pain.

There are no palpable abdominal or vaginal masses, no mass protruding from the vulva, no history of urinary affection as dysuria, frequency nor urgency.

Other systems review revealed no abnormality.

DIAGNOSIS

A 26 year patient, P2+0, with contact bleeding of one month duration for further investigation.

Perimenopausal bleeding (Another example)

Complaint

Irregular vaginal bleeding of 5 months duration

History of present illness

The condition began 5 months ago when the patient started to complain of irregular uterine bleeding in the form of menometrorrhagia, the patient changes 6 times/day instead of twice/day in the past, the bleeding is bright red in color, associated with blood clots and back pain

The patient also complains of intermenstrual bleeding in the form of brownish spots alternating with bright spots, the bleeding was not related to coitus. No symptoms suggestive of generalized bleeding disorder as bleeding per gums, bleeding per other orifices, petechial hemorrhage or ecchymotic patches.

No symptoms suggestive of malignancy as anorexia, cachexia, generalized fatigue and bone aches.

No history of abdominal masses or swellings.

No history of thyroid, renal or chronic liver troubles.

No symptoms suggestive of anemia as headache, dizziness, easy fatigability and pallor.

No history of urinary tract troubles as loin pain, hematuria, frequency, urgency or dysuria.

No history of GIT troubles as constipation or hematochezia.

No history of vaginal discharge, no history of hirsutism.

Other system review revealed no abnormality.

Menstrual history

Before the onset of the condition.

Diagnosis

P6 perimenopausal bleeding mostly dysfunctional uterine bleeding.

Perimenopausal bleeding (Another example)

Complaint

Irregular vaginal bleeding of 1 year duration

History of present illness

The condition began 1 year when the patient began to complain of irregular uterine bleeding in the form of menorrhagia, the patient began to change 6 times/day instead of 3 times/day, The bleeding was bright red in color and asso-

ciated with blood clots, no history of contact bleeding or intermenstrual bleeding, the bleeding was associated with a gradual increase in the abdominal size and dyspeptic symptoms in the form of reflux esophagitis and heart burn. No history of generalized bleeding tendency as bleeding per other orifices, bleeding per gums, petechial hemorrhages or ecchymotic patches

No symptoms suggestive of malignancy as anorexia, cachexia, generalized fatigue and bone aches. No history of chronic liver, renal or thyroid disorders. The patient complains of frequency of micturition but no history of hematuria, dysuria, urgency or incontinence of urine

No history of GIT troubles as dyschasia, hematochasia or constipation

No symptoms suggestive of anemia as headache, dizziness, easy fatigability and pallor. The patient sought medical advice; U/S was done for her and revealed the presence of a huge fibroid

Other system review reveals no abnormality

Menstrual history

Before the onset of the condition

Diagnosis

P6 perimenopausal bleeding mostly fibroid uterus

Postmenopausal bleeding (Another example)

Complaint

Irregular vaginal bleeding of 2 months duration

History of present illness

The condition started 2 months ago when the patient began to complain of irregular vaginal bleeding in the form of brownish spots, the bleeding was not relate to coitus and not associated with abdominal pain

No symptoms suggestive of generalized bleeding tendency as bleeding per other orifices, bleeding per gums, petechial hemorrhages or ecchymotic patches

No symptoms suggestive of malignancy as anorexia, cachexia, generalized fatigue and bone aches

No history of pelviabdominal masses or swellings

No history of chronic liver, renal or thyroid disorders

The patient complains of frequency of micturition but no history of hematuria, dysuria, urgency or incontinence of urine

No history of GIT troubles as dyschasia, hematochasia or constipation

No symptoms suggestive of anemia as headache, dizziness, easy fatigability and pallor

Other system review reveals no abnormality

Diagnosis

P6 postmenopausal bleeding.

Questions

What are the causes of irregular vaginal bleeding?

1. General causes:

- ⇒ **Endocrine diseases:** Hypo- or Hyper-thyroidism
- ⇒ **Psychological disturbance:** (Unsatisfied sexual urge)
- ⇒ **Cardio-vascular diseases:** (C.H.F - Hypertension)
- ⇒ **Liver diseases:** impaired estrogen metabolism and clotting factors.
- ⇒ **Renal diseases:** (Renal failure >> toxic capillaritis and thromb-asthenia).
- ⇒ **Blood diseases:** (Coagulation defects, Leukemia, or Thrombocyto-penia).

2. Local causes:

- ⇒ **Congenital uterine disorders:** (**Bicornuate uterus or septate uterus**).
- ⇒ **Traumatic disorders:** Hymenal tears or F.B. in vagina.
- ⇒ **Inflammatory disorders:** vaginitis, or cervicitis, or endometritis
- ⇒ **Neoplastic disorders:** (Fibroid, or CA cervix, vulva, vagina or uterus).
- ⇒ **Miscellaneous:** chronic constipation or displacement & endometriosis.

3. Conception:

- ⇒ **Bleeding in early pregnancy (1st trimester):** Abortion, EP, or vesicular mole.
- ⇒ **Bleeding in late pregnancy (after 28th wks):** P Previa, or Abruptio placen-tae.

4. Contraception:

 (Irregular intake of oral contraceptive pills or IUD)

5. Drug intake:

 (Oral anticoagulant or Aspirin, or Psychotropic drugs)

6. Dysfunctional uterine bleeding (D.U.B)

Define dysfunctional uterine bleeding

Abnormal uterine bleeding not related to general or local causes but due to abnormalities in the endocrine glands controlling the menstruation "Hypothalamic - pituitary - ovarian axis" without organic lesions.

What are the types of dysfunctional uterine bleeding?

- ♣ Ovular:
 - Functional polymenorrhea or menorrhagia
 - Corpus luteum insufficiency & persistent corpus luteum
- ♣ Anovular:
 - Threshold bleeding Metropathia hemorrhagica

What are the investigations of postmenopausal bleeding?

- ♣ To exclude general causes: CBC, PTT, PT, LFT, RFT
- ♣ To exclude local causes "Trans-vaginal U/S - Vaginal and cervical smears - Hysteroscopy - Biopsy"

What is the treatment of dysfunctional uterine bleeding?

◆ **General lines of treatment:**

- ⇒ **Bed rest.**
- ⇒ **Iron supplement. & Vitamins.**
- ⇒ **Reduction of weight.**
- ⇒ **Blood transfusion** according to amount of blood loss.

◆ **Non - hormonal treatment:**

- ⇒ **Anti-fibrinolytic agents:**
 - ★ Epsilon Amino-caproic Acid (EACA)
 - ★ Tranexamic acid (Cyclokapron®): 1 g tab. 4 times daily, ↓ bleeding 50%.
- ⇒ **Haemostatic agents:** "To ↑ platelet aggregation and to ↓ capillary fragility"
 - ★ Diosmin (Daflon®)
 - ★ Ethamsylate (Dicynone®)
- ⇒ **Thromboxane:** VC and platelet aggregation
- ⇒ **PG synthetase inhibitors:** reduce VD induced by PGE2

◆ **Hormonal treatment:** →

- ⇒ **Progesterone:**
 - ★ **Forms:**
 - (Norethisterone "Primolut®").
 - (Medroxy-progesterone acetate "Provera®") to combat high E level.
 - Levonorgestrel containing IUCD
 - ★ **Timing:** 5th d of the cycle for **20 days** Or **15th day** of the cycle for **10 days**
 - ★ **Doses:** 2-3 tabs. / d
- ⇒ **Combined OCPs** (Gynera®, Marvelone® & Cilest®)
 - ★ 2-4 tab./d till bleeding stops; then tab. / d for 20 d (Cycloprogy Nova, **New OCPS:** Gynera, Marvelone & Cilest)
- ⇒ **Estrogen:**
 - ★ **In severe cases & In Threshold bleeding:** oral conjugated estrogen for 20 d; combined (with P) in the last day to promote normal period.
- ⇒ **Androgen:** "Danazol - Methyl testosterone - Gestrinone"
- ⇒ **GnRH analogue:** "Nasal spray - IMI - SC" every 3 - 4 w >> **amenorrhea**

◆ **Surgery:**

- ⇒ **Curettage of the uterine cavity**
 - ★ **Diagnostic & therapeutic,** 50% cured - 25% improved - 25% no effect.
- ⇒ **Endometrial ablation or resection:**
 - ★ **Using:** LASER - Electrocautery - Thermal destructive techniques
 - ★ **Disadvantage:** risk of endometrial proliferation - endometrial cancer - Amenorrhea in 50% of cases - reduces bleeding in 90% of cases.
- ⇒ **Hysterectomy**
 - ★ **After failure of the previous lines of treatment"**
 - ★ ♀ > 40ys with adequate number of children, hormonal Treatment & curettage is repeatedly failed
- ⇒ **N.B: if there is infertility** → induction of ovulation

What's the most common cause of postmenopausal bleeding?

What's considered excessive blood loss?

More than 80 ml.

What are the main 2 causes of abnormal bleeding adolescent?

What's Halban disease?

What must always be considered in a peri-menopausal or postmenopausal woman with abnormal uterine bleeding?

What's the incidence of cancer in postmenopausal female?

What's the character of bleeding in metropathia hemorrhagica?

Prolonged painless bleeding following a short period of amenorrhea

What is the differential diagnosis of contact bleeding?

1- Ulcerative lesions of the cervix:

- a) Cancer Cervix (malignant ulcer), erosions
- b) Infected cervical lacerations
- c) Trophic ulcer in case of prolapse
- d) Bilharzial ulcer, TB, syphilitic & herpetic ulcer

2 - Proliferative lesions of the cervix:

- (a) Cancer cervix
- (b) Adenomatous, Fibroid polyp
- (c) Bilharzial polyp

3 - Other causes of contact bleeding:

- (a) Cervical (polyp, erosions, cancer)
- (b) Vaginal (polyp, erosions, ulcer)
- (c) Placenta previa

Mention the procedure of PAP smear?

- ⇒ Patient is not menstruating & no douching or intercourse for 24 hours.
- ⇒ Use vaginal speculum with no lubricants + no PV.
- ⇒ Collection by Ayer's spatula (wooden) or Rolon spatula (plastic) → rotate 360° at the external os, endocx cells & use the other side for the lateral vaginal wall. Use brush cytology to take cells from the endocx
- ⇒ **Spread on a slide:** fixation by 95% alcohol & stained by PAP stain → Microscopic ex.

What are the indications of P.A.P smear?

- ⇒ **Routine screening:** starting 18 years & once sexual activity starts.
- ⇒ **For low risk:** every 3 years.
- ⇒ **For high risk:** every 1 year
 - ★ Multiple partners
 - ★ HPV-HIV
 - ★ Smoking
 - ★ **Subtotal hysterectomy** due to benign lesions.
- ⇒ **After CIN:** every 2 m → 2 years, Every 3m → 3 years then every 1 year

What are the causes of abnormal PAP smear & interpretation?

Bethesda system	PAP system	Dysplasia	CIN
Normal	I	N	
Infection	II	Inflammatory atypia	
Reactive changes (pizzar cells)			
Atypical sq. cells	II R	HPV	
Low grade sq. intraepithelial neoplasm (LSIL)	III	Mild	CIN I
High grade sq. intraepithelial neoplasm (HSIL)	IV	Mod Severe (CIS)	CIN II CIN HI
Sq cc	V	Sq cc	

What is the management of abnormal Pap smear?

- ⇒ **Atypical cells** → treat infection for 6 weeks then follow up
 - ★ If normal → repeat after 6 month
 - ★ If still atypical → colposcopy & CDB
- ⇒ **CIN I** → repeat after 6 month → as above
- ⇒ **CIN II & III** → colposcopy & CDB

What are the other tumors causing of perimenopausal bleeding?

Fibroid, polyps, CIN, adenomyosis, endometrial hyperplasia, ovarian neoplasm

What are the types of endometrial hyperplasia?

Simple hyperplasiacystic glandular hyperplasia

Complex hyperplasia ...adenomatous hyperplasia

Atypical hyperplasiaany type +atypia

Q: How to differentiate genital tumors?

	Endometrium	Ovary	Cervix
Age	>60 yrs	Any age	35-45yrs
Symptom	Postmenop. bleeding	Abdominal distension	Contact bleeding
Signs	Small uterus except fibroid, pyometra	Adenxal swelling	Suspicious cervix
Screen	TV-US (4-5mm)	Examination, tumor markers, Doppler	-PAP smear -Colposcope
Inv	D&C ...hysteroscope	U/S, tumor markers	Biopsy
Staging	Surgical	Surgical	Clinical
Ttt	Surgical mainly hysterectomy	Laparotomy +/- chemotherapy	Surgery or radiotherapy
Prognosis	The best (early diagnosis)	The poorest (late diagnosis)	

Q: Define menopause?

Physiological permanent cessation of menstruation for 6-12 months in any woman older 40yrs

Q: What are the causes of postmenopausal bleeding?

1. Local causes "in the genital tract"

- ⇒ **Neoplastic:** CA of the genital tract. & feminizing ovarian tumors.
- ⇒ **Inflammatory:** Senile "atrophic" vaginitis or endometritis (1/3 of cases)
- ⇒ **Traumatic:** Retained pessary or trophic ulcers of prolapse.

2. Hormone replacement therapy: This may lead to breakthrough bleeding

3. General causes:

- ⇒ **Coagulation defects** e.g. thrombocytopenia & cirrhosis.
- ⇒ **CVS causes** as hypertension or congestive heart failure.
- ⇒ **Early cases of** hypothyroidism or thyrotoxicosis.

4. Urethral or rectal causes: Urethral Caruncle or piles or malignant tumors.

How to exclude malignancy?

- Transvaginal US: endometrial thickness not >4-5mm
- Fractional curettage or aspiration cannula (Pipelle)
- Hysteroscopy

What is most accurate?

Hysteroscope (visualize & take a biopsy)

What can be done without anesthesia?

Pipelle, as its diameter is thinner than the internal os (3-4mm).

How to treat cancer endometrium?

Stage			Treatment
1	A	Endometrium only	Surgery TAH & BSO
	B	<1/2 endometrium	
	C	>1/2 endometrium	
2	A	Cervical gland	Surgery + Radiotherapy TAH & BSO followed by radiotherapy
	B	Cervical stroma	
3	A	Tube +/- ovary	Radiotherapy Brachytherapy + Teletherapy
	B	LN	
	C	Vagina	
4	A	Bladder /rectum	Palliative Hormonal + Chemotherapy
	B	Distal metastasis	

What are the indications of postoperative radiotherapy?

-Mac:

- ♣ The tumor infiltrates >1/2 myometrium
- ♣ LN involvement

-Mic:

- ♣ Grade II or III
- ♣ Papillary or clear (serous) cell carcinoma
- ♣ +ve peritoneal cytology
- ♣ Microscopic cervical invasion

What are the risk factors for cancer endometrium?

- ◇ **Age:** any age but more at 60 y
- ◇ **Smoking** Decrease as it's an enzyme inducer → ++Catabolism of Estrogen
- ◇ **PH + ve**
- ◇ **Lynch II syndrome:**
⇒ Adeno-carcinoma in breast, colon, gall bladder, intestine, ovary, endometrium, non Polyposis hereditary colorectal cancer.
- ◇ **Pre-mal:** Endometrial hyperplasia
- ◇ **Nullipara.**
- ◇ **High social class white Race**
- ◇ **↑ E:** (PCO, obesity, Early Menarche, late menopause)
- ◇ **Cancer corpus syndrome** = CA end + obese +DM + HTN

What are the types of ovarian neoplasm?

- **Common epithelial tumors (70-80%)**
 - ♣ serous tumors
 - ♣ mucinous tumors
 - ♣ endometroid tumors
 - ♣ mesonephroid tumors
 - ♣ Brenner tumor
- **Sex cord stromal tumors (10%)**
 - ♣ Granulosa-Stroma cell tumors
 - ♣ Sertoli-Leyding cell tumors (Androblastoma)
 - ♣ Gynandroblastoma
- **Germ cell tumors (5-10%)**
 - ♣ UndifferentiatedDysgerminoma
 - ♣ Poorly differentiatedEmbryoma, embryonal carcinoma
 - ♣ Differentiated....Embryonic (Teratoma), extraembryonic (Choriocarcinoma)

How to treat malignant ovarian tumor?

- ◇ **Prophylactic :**
 - ⇒ Early detection & Treatment of pre malignant lesions
 - ⇒ Pan hysterectomy for female > 40 y. even in benign lesions

◇ **Active : (S C R)**

I. Surgery :

★ Types:

- la : young age, germ cell tumor → unilateral salpingo oophorectomy + follow up
- la old age , lb , lc- (4)
- After that: cyto reduction

★ **Types:**

- 1ry : before the chemo therapy
- 2ry : after the chemo therapy
- Interval : after 6 courses of chemo therapy

★ **Prognosis:**

- Microscopic residual tumors : 60 %
- < 2 cm residual tumors : 35%
- > 2 cm residual tumors : 20 %

★ **Signs of malignancy intra operative** e.g infiltration, ascites, adhesions

★ **Spillage of the tumor:**

- Peritoneal toilet by distilled water
- Chemo therapy
- Intra peritoneal P 32

2. Chemotherapy

★ **Type :**

1. Epithelial tumors: platinum
 - a. Cis platinum (oto, nephro, neuro toxic)
 - b. Carbi platinum (myelotoxic)
2. Sex cord stroma tumors: progesterone
3. Germ cell tumors:
 - **V** (vincristine) **A** (adriamycin) **C** (cyclophosphamide)
 - **P** (cis- platinum) **E** (etoposide) **B** (bleomycin)

★ **Investigations before Treatment:** CBC, LFT, KFT

Recurrence after Treatment:

- ◆ **Resistant:** recurrence before 4 m: no hope
- ◆ **Intermittent recurrent:** recurrence between 4 & 12 m
- ◆ **Sensitive but recurrent:** recurrence after 12m:
- ◆ **Treatment:** surgery, chemo, irradiation & taxol

3. **Irradiation:** It has no role except in the treatment of dysgerminoma or when the residual part of the tumor < 2cm (external moving abdominal strip or internal stage Ic or tumor rupture during removal as gold¹⁸⁹ or P³²)

4. **Palliative:** scheme

5. **2nd look laparotomy**

6. **2nd look laparoscopy** (dangerous & better avoided)

★ **Indications:**

- | | |
|---------------------------|--------------------------|
| ○ Recurrence of the tumor | ○ Advanced age |
| ○ Advanced stage | ○ Persistent high CA 125 |

7. **Follow up:**

- | | |
|--------------------------|--------------|
| ★ Tumor markers (CA 125) | ★ Radiology |
| ★ 2nd look laparoscopy | ★ Laparotomy |

What are the risk factors for cancer cervix?

- ◆ **Age:** 40 y.
- ◆ **Smoking:** +++
⇒ (↓TSG, release of carcinogens in cervical mucosa, ↓ immunity)
- ◆ **PH:** +ve
- ◆ **FH:** +ve
- ◆ **Pre-mal:** CIN
- ◆ **Specific** 2MP (Multipara, Multiple partners (due to STDs or Irritation by smegma))
- ◆ **Infection HPV 16.18**
- ◆ **Low social class**
- ◆ **Black races**

What are the advantages of surgery over radiotherapy?

- Remove the tumor bulk
- Avoid the disadv of irradiations

What are the disadvantages of surgery?

Anesthesia, Infection, injury e.g.: ureteric, bladder, urethral, rectal, intestinal lymph cyst (due to removal of LN)

Hge:

1ry: injury of blood vessel intraop

2ry due to infection

Reactionary due to slipped ligature

Wound: inf, burst abdomen hernia"

N.B. - Intra operative: Anesthesia, injuries, hge

1st day: reactionary hge & fever

2nd day: intestinal distension

3rd day: urine retention

5th day: DVT, 2ry hge

7th day: lung collapse

Later:

Wound complication.

Vaginal infection, hematomas, granulomas, Fistula, adhesive I.O, Lymphocyst, Menopausal symptoms.

Psychological.

What are the contraindications for radiotherapy?

- Young age, Infection, Adhesions
- Fibroid, ovarian cyst Adenocarcinoma

How could you confirm that the cause of bleeding is cervical polyps?

By Cusco speculum

What are the types of polypi?

Cervical	Corporal
Mucous polypi	Adenomatous
Inflammatory	Placental
Fibroid polyp	Fibroid
Malignant polyp	Malignant

Q: What are the symptoms of polypi?

- ♥ Asymptomatic, Leucorrhea
- ♥ Vaginal bleeding (contact bleeding or metrorrhagia)
- ♥ Abdominal pain (uterus trying to expel it)

Q: What are the complications of polypi?

- infection2ry to trauma & ulceration
- Malignancy (rare)....squamous metaplasia of epithelium

Q: How to differentiate uterine from cervical polypi?

- Sound ...pass it around the polyp
- Hysteroscopy, HSG

Q: What is the definite therapy?

D&C, polypectomy, hysteroscopic removal, Hysterectomy
Send for histopathology for any malignancy

Q: What is the ttt of cancer cervix?

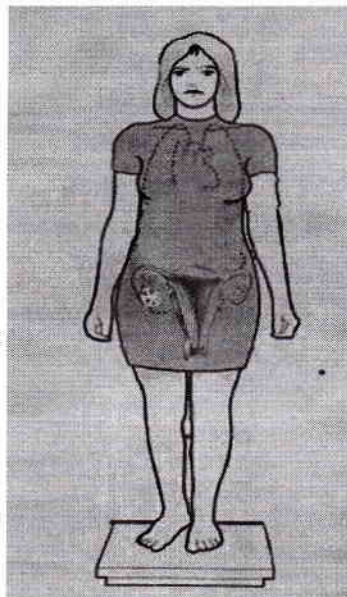
Stage			TTT
1	A	Microinvasive A-1....<3mm A-2....5-7mm	TAH Extended hysterectomy
	B	B-1....<4cm B-2....>4cm	
2	A	Upper 3/4 vagina	Radiotherapy
	B	<1/2 parametrium	
3	A	Lower 1/3 vagina	Radiotherapy
	B	>1/2 parametrium	
4	A	Bladder /rectum	Palliative
	B	Distal metastasis	

Infertility (Issue brief)

Female

Causes:

- ♣ Ovarian
- ♣ Tubal
- ♣ Cervical



History of the husband:

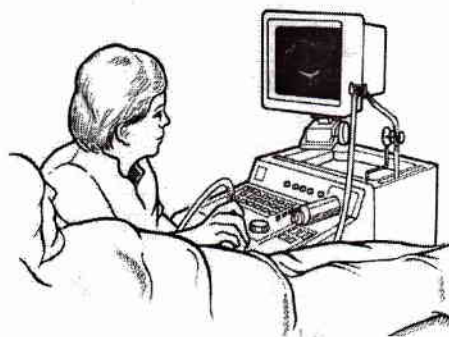
- ♣ **Personal**
 - Name, age, occupation & smoking.
- ♣ **Present:**
 - Psychological
 - Malformations
 - infections
- ♣ **Past:** drugs, surgeries & diseases
- ♣ **Previous marriage ± children**

Sexual history:

- Frequency, pain, coitus at time of ovulation, postcoital douches, lubricants, effluvium semenis

Investigations:

- ♠ Semen analysis
- ♠ HSG
- ♠ PMEB
- ♠ Hormonal study
- ♠ US
- ♠ Laparoscopy



Treatment:

- ♠ Induction of ovulation
- ♠ Tuboplasty
- ♠ Cervical cauterization
- ♠ Treatment of infections



Infertility (failure of conception)

Personal history

Previous marriage & outcome

هل سبق لكم الجواز قبل كده وكان عندك كام طفل و اصغرهم عنده كم سنه

History of present illness

Duration of the present marriage

بقالكم كم سنه متجوزين

Causes:

Ovarian cause

Menstrual irregularities, obesity, Androgen, Prolactin, Thyroid, menopause.

هل دوره ملخبطه, زياده في الوزن وزياده في الشعر عن الطبيعي وصوتك متغير. هل هناك افرازات زي اللبن من صدرك, مشاكل في الغده الدرقيه, هل عندك صهد

Tubal factor

Salpingitis

TB (2L2N)

وجع اسفل البطن مع افرازات ريحتها وحشه
حراره وعرق بالليل مع هزال وانسداد النفس

Cervical factor

Cervicitis or surgery

التهابات مزمنه في عنق الرحم قرحة في عنق الرحم-الم اسفل الظهر او عملتي عمليه كي لعنق الرحم .

History of the husband: زياده

Personal history

Name, age, occupation, address, smoking, previous marriage & if he has children or not.

Present history

Psychological – malformations – infections.

Past history

- Drugs: Anti-HTN, anti-cancer, for DM.
- Surgeries: abdominal, inguinal (hernia) or scrotal (varicocele).
- Diseases: DM, HTN, chronic diseases.

Sexual History: زياده

Frequency, pain, coitus at time of ovulation, postcoital douches, lubricants, effluvium semenis.

كم مره - وهل مصحوب بألم وهل بيحصل الجماع ايام اتبويض وبتعرفيها ازاى وهل بتشطفي بعد الجماع وهل الزوج بيستعمل اي مواد علشان الدخول يكون اسهل وهل السائل بيوقع منك بعد الجماع.

Investigations

Semen analysis

عمل زوجك تحليل السائل المنوي-كم مره- النتيجة - هل احتاج علاج- ايه هو- بقاله اد ايه بياخذه عمل اي تحاليل بعد اعلاج وايه النتيجة - هل احتاج عمليه.

HSG & Tubal insufflation

عملتي نفخ انابيب او اشعه بالصبغه (امتى وفين والنتيجه).

PMEB

عملتي عينه من الرحم (امتى وفين والنتيجه).

Hormonal analysis

عملتي تحاليل هرمونات (امتى وفين والنتيجه).



U/S
Laparoscopy

عملتي اشعه تلفزيونيه وايه النتيجة.
عملتي منظار البطن (امتى وفين والنتيجه).

Treatment

Induction of ovulation

هل اخذت علاجات لتنشيط المبيض برشام و لاحقن ولمدة قد اليه والنتيجه.

Tuboplasty

هل عملت تسليك انابيب بالمنظار.

Cervical cauterization

عملت كي لعنق الرحم.

Treatment of infections

اخذتي اي مضادات حيويه او علاج .

Diagnosis

Age, parity, 1ry or 2ry, duration, cause, associations, complications for further examination & investigation الشياكه

Primary infertility sheet

Complaint

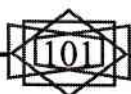
Inability to conceive inspite of regular unprotected marital relation of 3 years duration.

History of present illness

This is the first marriage for her & her husband. She started to seek for conception after 2 years of marriage. History was taken with pelvic examination, semen analysis was ordered & done one month later which was normal as the patient said

1. There are symptoms suggestive of ovarian factors as irregular menses, recent changes in the body weight, hair growth.
2. There is no milk discharge from the breast
3. The condition was not associated with manifestations of increased intracranial tension as persistent headache, blurring of vision or projectile vomiting
4. No history of psychological or head trauma.
5. No excessive hair growth or hoarseness of voice (virilizing ovarian tumors)
6. No symptom suggestive of recent body weight changes or psychological trauma or recent changes in thyroid activity (excessive wt loss, nervousness, insomnia, tremors & intolerance to hot weather) or myxedema (weight gain, hoarseness of voice, constipation, intolerance to cold weather)
7. There are no symptoms of TB (night sweating, night fever, loss of weight, loss of appetite, admission to chest hospitals, +ve family history of DM)
8. There are no symptoms suggestive of cervical factors in the form of discharge, dyspareunia, dysmenorrhea, dysuria & backache.
9. No symptoms suggestive of tubal factor as abnormal discharge or lower abdominal pain or history of pelvic surgery.

The patient sought medical advice & done investigations in the form of U/S, hormonal profile but no available reports. HSG was done 1 year ago & revealed no abnormality as the patient said. She received medications in the form of clo-



mid 2-4 tablets/day for 5 days for 8 continuous months with monitoring ovulation by transvaginal U/S with no evidence of ovulation. The patient received injectables for induction of ovulation. Now she is waiting for diagnostic laparoscopy. Review of other body systems showed no abnormality.

Sexual history

Sexual intercourse is carried out regularly 3 times/week with no dyspareunia. The patient used to take postcoital douches in the morning, no use of lubricants, no history of effluvium semenis.

Husband history

Personal history of the husband:

Present history of the husband: No history of psychological troubles, no history of genitourinary malformations or infections. No premature ejaculation, no impotence.

Past history of the husband:

- **Medical:** No history of intake of antihypertensive drugs or anticancer drugs. No history of DM or TB.
- **Surgical:** No history of abdominal, pelvic or scrotal surgeries

Secondary Infertility

Complaint:

Failure of conception for 5 years inspite of regular unprotected marital relations.

History of present illness:

The patient started investigations for infertility after 2 years after her last delivery which was prolonged ended by CS followed by atonic PPH with blood transfusion & the condition was controlled. 2 weeks after her delivery, the patient developed fever, anorexia, headache & malaise with lower abdominal pain & foul vaginal discharge. The patient was admitted to fever hospital & received medications of nonspecific nature & the condition was improved. 2 years ago the patient had done U /S & revealed ovarian cyst. Laparotomy was done with ovarian cystectomy. Semen analysis was ordered & done which revealed no abnormality. HSG was done & revealed Peritubal adhesion,

The patient is now waiting for operative laparoscopy & adhesiolysis
1- 8 as 1ry infertility

QUESTIONS:

Define Infertility.

- ⇒ **1ry infertility:** failure of conception after 1 year of unprotected sexual intercourse with no previous conception whatever its nature live birth, still birth, abortion, ectopic pregnancy)
- ⇒ **2ry infertility:** failure of conception after 2 years after a previous conception

What is the normal conception rate?

- After 1 month 15 - 20 %
- After 6 month 50 %
- After 1 year 85-90 %

How to suggest ovarian factor?

1. Symptoms of ovulation:-

- ★ Regular menses,
- ★ Spasmodic dysmenorrhea,
- ★ Premenstrual tension,
- ★ **Midcyclic triad** {discharge (↑E), pain (=mittelschmerz due to ovulation), spotting (transient drop of E level)}

2. Symptoms of ↑prolactin:- galactorrhea

3. Symptoms of thyroid dysfunction:- weight changes, heat/ cold intolerance

4. Symptoms of PCO or ↑androgen:- ↑ hair growth, obesity.

5. History of trauma or surgery

6. Contraceptive history of :- implants or injectables

What is the surest sign of ovulation?

Mention the WHO classification for ovarian dysfunction.

◆ **Group 1: hypothalamic pituitary failure(↓ FSH & E)**

⇒ Congenital

⇒ Trauma → surgical, radiological, direct

⇒ Inflammation → meningitis, encephalitis, TB

⇒ Neoplasm → from pituitary gland "glioma, meningioma"

⇒ Miscellaneous → empty sella, psychological causes, ↑prolactin, obesity &

↑exercise

◆ **Group 2: hypothalamic pituitary dysfunction (PCO, idiopathic. Anovulation)**

◆ **Group 3: Ovarian failure (↓FSH & E↑)**

⇒ Congenital

⇒ Trauma → surgical, radiological, direct

⇒ Inflammation → oophoritis, PID & peri-tubal adhesion & peritonitis

⇒ Neoplasm → benign & Malignant

⇒ Miscellaneous → premature ovarian failure

◆ **Other group:** ↑ prolactin (15%), Hyperandrogenism, LPD (5%), LUF, resistant ovary

What is the resistant ovary syndrome?

What are the investigations done for ovarian dysfunction?

◆ **To prove anovulation:-**

1. Basal body temperature

- ★ **Normally** biphasic (↑ 0.3-0.5° in the 2nd half due to P),
- ★ **Monophasic** in anovulation
- ★ **Subnormal rise** in luteal phase defect)
- ★ **If persistent ↑** (Halban's or pregnancy)}

2. **Serum progesterone**

- ★ <3ng = anovulation.
- ★ >10ng/ml = ovulation.
- ★ 3-10ng/ml = LPD

3. **Premenstrual endometrial biopsy:**

- ★ Proliferative in anovulation, secretory in ovulation.
- ★ In **LPD** there is lag > 3 days between menstrual dating & histological dating.
- ★ Also allows diagnosis of infections as TB.
- ★ **S.E.:** disturbing a co-existing pregnancy.

4. **Folliculometry** (mature follicle is 20ml).

5. **Progesterone challenge test** "at 7 days after ovulation".

6. **serum prolactin:** - "normally 2 – 20 ng /ml.

7. **T3, T4, TSH.**

8. **Androgen level** "0.2 – 0.8 ng/ml".

9. **Adult onset of CAH** → 17 OH progesterone & DHEA (treatment → steroids).

10. **Laparoscopy with visualization of CL, Cx mucus** assessment, detection of **LH surge in urine.**

11. **FSH**

- ★ If ↑ → Karyotyping.
- ★ If ↓ → H-P failure → do GnRH stimulation test, CT, MRI to differentiate pit. Or hypothalamic cause.

12. **Vaginal smear** (P effect = intermediate cells).

13. **Cervical mucus changes:**

- ★ Profuse, watery, +ve Fern & Spinnbarkeit (just preovulatory)

What is Salpingitis isthmica nodosum?

Precautions taken during tuboplasty?

- ★ Wide incision.
- ★ Fine suture & special instruments (binoculars, special glass rods).
- ★ Proper hemostasis.
- ★ Avoid serosal injury & dryness.
- ★ Avoid Talc powder.
- ★ Intraperitoneal infusion of dextran, ringer lactate, Cs & heparin to ↓ adhesions.

What are the investigations for cervical mucus assessment?

1. **Cervical mucus assessment "just pre-ovulatory".**

- ⇒ **Quantity:** 0.3 ml.
- ⇒ **Quality:** runny clear, +ve **fern** & **Spinnbarkeit** test & **WBCS** are 0-1/HPF

2. **Post coital test (Sims-Huner test).**

- ⇒ **Male** → abstinence from SI for 2 – 3 d.
- ⇒ **Female** → just pre-ovulatory "known by folliculometry".
- ⇒ **Aspiration of cervical mucous** 2 – 12 h after intercourse (by tuberculin needle or pipelle).
- ⇒ **Normally** → No of sperms > 20 motile/HPF.

3. Cx mucus assessment (as above) each take a score (0,1,2,3 (Moghissi scoring)):

⇒ 11 – 15 → favorable

⇒ 5 – 10 → unfavorable.

⇒ <5 → poor.

⇒ Causes of abnormalities:-

★ Bad cervical mucus.

★ ↓No. of sperms or dead.

★ infection with leucocytosis.

★ immunological → shaking movement of sperms.

★ improper timing or technique.

⇒ Management: → repeat semen analysis, cervical mucous assessment & PCT.

4. Cx mucus contact test "in-vitro PCT" in test tube or on slide.

5. Cervical mucus culture in infection.

6. Mixed agglutination reactions to detect immunological infertility.

How to treat a case of immunological infertility?

1- Condom therapy for 9 months.

2- Corticosteroids.

3- AIH.

What are the WHO criteria for normal semen?

Norma criteria (WHO): → Seminogram (Abnormalities → OTA System).

★ Macroscopically:

○ Volume: 2-6 ml,

○ Colour: whitish.

○ Odor: characteristic odor.

○ pH: 7.4-8.

○ Liquefaction after ½ hr.

★ Microscopically:

○ Count: 20 millions/ml (↓ in oligospermia, absent in azospermia, > 250 millions in Polyzoospermia).

○ Normal forms: >30% (increase in teratospermia).

○ Motility: > 50% within 1 h (↓ in asthenospermia & absent in necrospermia).

○ Pus cell: 0-1/HPF (pyospermia in infection).

What are the grades of sperm motility?

⇒ Fast forward.

⇒ Slow forward.

⇒ Circular or shaking.

⇒ Dead.

What are ART, ICSI & SUZI?

◆ Indications:

1. Endometriosis & irreparable tubal damage.

2. Low sperm count.

3. Immunological cause.
4. Unexplained infertility.

◆ **Superovulation:**

1. **Medical hypophysectomy** by GnRH agonist intra nasally (Buserlin) at day 20.
2. **HMG** or **purified FSH** (metroline) **10 days after** GnRH till the ova reaches 17 ml.
3. **HCG is given** when the **ova reach 20 ml** → ovulation usually occurs after 36 hr.
4. **Retrieval of the ova (13 - 15 oocytes)** just preoperative (guided by TVUS or laparoscopy).
5. **The semen sample is transferred in a culture media** (Ham's F10, Tyrode's or Earl's medium).
6. **If the gametes are transferred to the tube → GIFT.**
7. **If the zygote is transferred to the tube → ZIFT.**
8. **If the zygote** is cultured for 2 days (4 - 8 cells) then transferred to the uterus → **IVF-ET** without anesthesia to the fundus of the ut.
9. **Microinjection of Ispermatozoa** into the cytoplasm of a single metaphase II oocyte → **ICSI**.
 - **Indications:** failure of IVF trial (3 times), marked oligo or asthenospermia.
 - It is the most commonly done, success rate is 30-60% pregnancy in 25% of cases.
10. **Subzonal insertion of 5 - 10 sperms** by microinjection into the perivitelline space of oocytes then transferral of the embryo to the UT or FT → **SUZI** (↑ incidence of triploid embryo & fertilization rate is only 15-30%).
11. **Luteal phase support:** progesterone or HCG(5000-10000 IU/2-3 days).
12. **Success rate:** 20 - 30 % when the age is 25 years & 10 % at 40 years (MP 35%, GP 3%). It is better to be repeated for 3 or 4 cycles.

What is AIH?

- ◆ Assisted insemination of husband semen (0.3 - 0.8 ml) into the ♀ genital tract.
- ◆ ± Induction of ovulation & ± HCG (AIH done twice 18 & 48 hs after HCG).
- ◆ Intra Cx or intravaginal (can use raw semen) or intrauterine (use processed semen (by washing or swim up method) to avoid anaphylaxis by semen proteins.
- ◆ **Indications:-**
 - ⇒ **Poor semen quality** (AI Donor semen can be done but unethical)
 - ⇒ **Immunological** (also cx hostility) & unexplained fertility
 - ⇒ **Coital difficulties**
- ◆ **Preparing the semen transferred:-**
 - ⇒ **↓PG content** as it leads to uterine cramps & expulsion of the semen
 - ⇒ **In pyospermia** centrifuge & add specific antibiotics
 - ⇒ **In asthenospermia** Add pentoxiphylline, kallikerines, & caffeine
 - ⇒ **In high viscosity** Add chemotrypsin

What is the most common causative organism of tubal factor? How to diagnose it?

- ⇒ Chlamydia.
- ⇒ Diagnosis:
 - **Smear** Cellular atypia, inclusion bodies.
 - **Cx mucus** > 10 pus cell/oil immersion field.
 - **Culture:** McCoy media (most reliable) but takes 2 weeks.
 - **MIFT, ELISA** (most rapid).
 - **Nucleic acid probing** (reliable as culture).

What is the differential diagnosis of vaginal discharge?

Candida	T. Vaginalis	Bacterial Vaginosis
Fungal infection by <u>CANDIDA albicans</u>	Protozoal infection	- Bacterial <u>Bacteroids</u>, <u>Peptostrept</u> <u>gardenerella</u>vagina-lis&mobilancus
incidence		
30-35%of Vul-vag, in 15-20% non preg & 20 - 40% preg women (↓ PH & ↑glycogen)	5 -10% of vaginal in-fecti on + lives in swimming pools for 24 hrs	10 -25% pop 60%of vulvovaginitis
PF		
Pills, pregnancy, CS, antibiotics, AIDS, DM	↓ acidity, Antibiotic therapy C.P	- STD, IUD Pills - Uncleaniness
Mode of transmission is by contamination from hands, towels, coitus, instruments		
SYMPTOMS		
	DISCHARGE	
Thick White semisolid, soapy ↑ before menses	- Profuse Greenish - Fishy odor frothy ↑ Af-ter menses	Homogenous grayish malodorous ↑ During menses & after S. Into
Itching, dysparunia & Infection of the ♂	NO symp in 50%	
EXAMINATION		
- Vulva is inflamed red, excoriated edema - Vaginitis may preclude the passage of the specu-lum	Minimal inflammation	
- White patches - Crural folds affection		
- Reddish, petechial hge (strawberry) - Greenish discharge, Cx is red		

INVESTIGATIONS		
• pH<4.5 • LM: fresh wet drop +10% KOH → hyphae • Gram stain: no pus cells Doderl bacilli are present • Cultures: Nickerson's or Sabouraud's • Antigen detection: microstix	• pH>5 • Wet preparation → pyriform motile • Pap smear → org (G-ve), • WBCS, ↓↓ lactobacilli • Culture: Feinberg, starts, Trichocole nutrient agar • Colposcopy: T shaped BV on the CX	• pH>4.5 • Fresh + KOH → fishy odor (Whiff test) • Clue cells: obscured cell margins of vag epithelial cells due to heavy org • Gray discharge 3criteria diagnose BV
TREATMENT		
TREATMENT OF THE PREDISPOSING FACTORS +		
Local antifungal e.g ketoconazole (Nizoral) Resistant cases: Treat the PF + long term suppression(3-6m) with oral drug (Ketoconazole 200 2x1x5) Also in virgins	metronidazole, tinidazole treatment of husband	* Metronidazole Vag. 250 mg 1x3x7, clindamycin 300mg 1x2x7 or local cream 2% 1x7 * Broad spectrum as ampicillin, tetracycline (500mg 1x4x7) * Treatment of ♂ is not recommended

What are the methods to check tubal patency?

- Hysterosalpingography
- Laparoscopy
- Hysterosalpingo-Contrast-Sonography
- Tuboscopy & tubal cannulation

What is the name of the dye used in HSG?

Lipidol	Urograffin
• 40% iodide in poppy seed oil • More clear image • More complications (oil granuloma & oil embolism) • 2nd film after 1 day	• 40% iodide in water • less clear image • less complications • 2nd film after 1 hour

How does endometriosis cause infertility?

- ★ **Anatomical defects:** ovarian encapsulation, tubal block & LUF \$
- ★ **Functional defects:** LPD, recurrent abortion 40% & intraperitoneal inflammation

How to confirm endometriosis?

Laparoscopy

- ⇒ See ...the characteristic lesions
 - ★ Typical lesion → **gun shot** or **powder burn app.**(dark brown implants)
 - ★ Subtle lesion → **Yellowish** or **Red implants**, adhesion, nodules, cyst
- ⇒ Biopsy ...active endometrial outside the uterine cavity

What is the name of the dye used in laparoscopy?

⇒ Methylene blue

What are the causes of pain in endometriosis?

Dysmenorrhea ...dyspareunia

DysuriaDyschasia

Deep ...chronic pelvic paindorsal pain, backache

What may be the cause of acute abdomen?

Rupture endometriotic cyst

What is the D.D of adnexal mass?

Ovary ...neoplastic & non-neoplastic ovarian swelling

Tubeectopic pregnancy, hydrosalpinx, pyosalpinx

Broad ligament ...broad ligamentary fibroid, paraovarian cysts

Uteruspedunculated subserous fibroid

Others ...pelvic kidney, retroperitoneal swelling

What is the medical therapy for endometriosis?

Progesterone	GnRH	OCP
• 30 mg/d for 3 – 6 m. • 1st choice as it is effective as other methods but cheap & less adverse effects. • Prog.+ ocp:- • At 1st pseudo-deciduas & on prolonged use: atrophy	• Reversible pseudo- menopause by the continuous manner • IM or sc or nasal spray • Prolonged use → • Hot flushes • Osteoporosis but to avoid use(E+P add back) • Dry vagina. • Expensive.	• One tablet/ daily for a year • (use progest-erone dominant & low dose estrogen 30-35µg) • Side effects: see ocps

Danazole	Gestrinon (Dimetriose®)
• 400-800 mg/d for 6-9m • Expensive • isoxazole derivative of 17α Ethinyl testosterone	• 1.25 – 2.5 mg 2/wk • 19 nor-testosterone derivative
• (-) GNRH effect on pit. • (-) Effect of gonadotrophins on ovary • (-) effect of E&P on endometrium • ↓SHBG, ↑ free A, & ↑ clearance of E&P • Net result: ↓E &P, ↑A & atrophic endometrium	
• "Action is guided by relief of symptoms or appearance of amenorrhea or side effects (???)"	
• Cl: pregnancy, cardiac, liver, renal diseases, HTN.	

What is meant by unexplained infertility?

Infertility inspite of:

- 1- Normal ovulation (proved by test for ovulation).
- 2- Normal patent tubes (proved by HSG, laparoscopy).
- 3- Normal uterine cavity (proved by PEB, hysteroscopy).
- 4- Normal semen analysis (at least done twice).
- 5- Normal postcoital test (good cervix mucus & sperm motility).

Q: What is role of laparoscopy in infertility?

	Diagnostic	Therapeutic
- Tubes	- Tubal block (to confirm HSG) - PCO & other ovarian swelling	- Salpingolysis, salpingostomy - PCO, ovarian cystectomy
- Ovary		
- Endometriosis	- endometriotic implants	- Cauterization of implants
- Others	- Evaluation of unexplained infertility	- Ovum pick up in IVF

What is hormone suppression therapy?

- Use of the anti-estrogen (e.g Danazole) to suppress growth of the endometrial glands, may be used 3m before & 3m after removal of chocolate cysts
- It may be used 3 months before induction of ovulation
- Recently proved to have no benefit

What is the most common cause for anovulation?

It is the polycystic ovarian disease

How to diagnose PCO?

◆ Hormonal:

- ⇒ ↑ LH, ↓ FSH (LH/FSH = 3/1).
- ⇒ ↑ T, DHEA, Estrogens & Prolactin (<30 ng/ml).
- ⇒ ↓ Progesterone, ↓ SHBG.

◆ To document Anovulation:-

- ⇒ Basal body temperature "Monophasic".
- ⇒ Premenstrual endometrial biopsy "no secretory changes".
- ⇒ Cervix " - ve fern test".
- ⇒ Vaginal smear → no intermediate cells.
- ⇒ Serum Progesterone → "< 3 ng/ml".
- ⇒ Absent LH surge.
- ⇒ Folliculometry.

- 1- Metabolism: impaired GT test, "↑ fasting insulin" & Serum fasting glucose/insulin < 4.5.
- 2- U/S: ovarian size $\geq 10\text{cm}^3$, ≥ 10 sub-cortical follicles (**Necklace appearance** & each cyst is 6-10 mm in diameter), stromal hyperplasia → → (Adam's criteria) (Not diagnostic present in 20% of normal ♀, OCPs, ↑A & Stress).

3- **Laparoscopy:** characteristic picture "**pearly white**" or "**ivory white**"

4- **D&C:** for any associated endometrial hyperplasia.

What are the other causes, How to diagnose & to treat them?

	Investigations	Treatment
Hyper-prolactinemia	-prolactin level (2-20ng/ml) -CT brain -Thyroid function test	-parlodel -Dopergine -Cabergoline -Quinagolide
Hyper-androgenism	Androgen level (0.2-0.8 ng/ml)	-COC -Cyproterone acetate
LPD	-Premenstrual spotting -premenstrual biopsy -Midluteal progesterone	Proper induction + HCG
LUFS	-U/S ...failure of follicle to decrease in size	-Proper induction + HCG
ROS	-decrease E +increase FSH -ovarian biopsy (normal)	-Induction is difficult -spont recovery
POF	-decrease E +increase FSH -ovarian biopsy (no follicles)	-No hope -HRT

What are the drugs for induction of ovulation?

- ⇒ Clomid alone +/- bromocriptin.
- ⇒ Clomid +HCG.
- ⇒ HMG +HCG.

What are their main side effects?

Multiple pregnancy, OHSS.

Is there role of surgery in OHSS?

No role, except if rupture or torsion occurred.

What are the new lines of therapy for OHSS?

Fractionated heparin & albumin.

Does obesity relate to infertility?

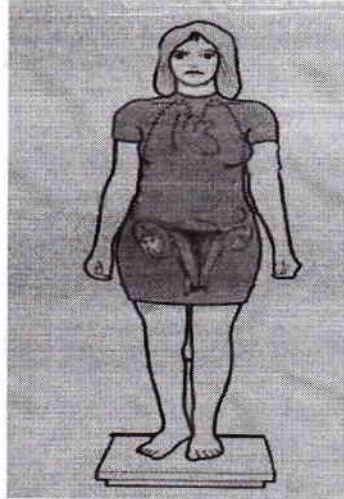
Yes, obesity leads to hyper-insulinase which has a role in PCO in 40% of cases. Hyperinsulinemia leads to increased androgen production by the ovary & decrease SHBG (which leads to increased free E & androgens).



Prolapse (Issue brief)

Causes:

- ♠ After delivery
- ♠ Chronic cough
- ♠ Chronic constipation



Symptoms:

- ♠ OCD
- ♠ Effect of effort & lying down

Complications:

- ♠ **Genital:** descent – sexual – Subfertility – stretch –congestive –trophic ulcers
- ♠ **Urinary:** SUI – retention – lower UTI – upper UTI
- ♠ **Rectal:** dyschasia

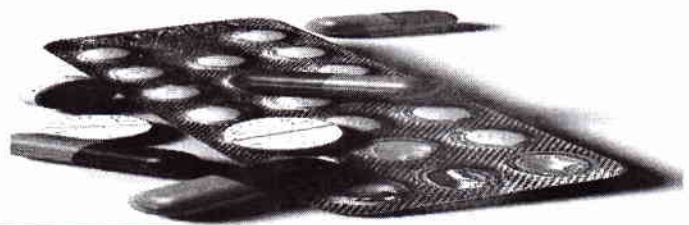
Investigations:

- ♠ Routine preoperative investigations
- ♠ US



Treatment:

- ♠ Preoperative preparation
- ♠ Treatment of trophic ulcers



Prolapse (mass protruding from the vulva)

لوا الحاله ورم من المهبل

Cause

After delivery, chronic cough or chronic constipation

هل جالك بعد ولاده ولا بعد امساك مزمن ولا كحه مزمنه

Clinical Picture

Onset, Character, Duration OCD

بقالة اد ايه بيزيد كل شويه

Effect of squatting, standing, straining & lying down

تأثير الحزق او الوقوف او النوم على الورم

Complications

Genital

⇒ Descent: mass

بتحسي ان فيه حاجه بتنزّل منك مع الحزق او حاجه سداكي من تحت

⇒ Sexual Dyspareunia

هل عندك مشاكل عند الجماع

⇒ Sub- fertility

هل متأخرة في الخلفة

⇒ Stretch: lower abdominal & backaches

هل عندك ألم اسفل البطن و الظهر

⇒ Congestive symptoms: dysmenorrhea, menorrhagia, leucorrhea

بتحسي بألم ٣-٤ ايام قبل الدوره ويستمر بعدها هل الدم كثير عليكي والافرازات عليكي كثيرة

⇒ Trophic ulcers

عندك التهابات و حرقان و قرح من تحت

B-Urinary

Frequency, SUI, retention, infection & reposition

بتدخلي الحمام كثير - لما بتحكّي بينزل منك بول - في مرة البول اتحاش فيكي - بتحسي ألم اسفل البطن وعند الكلى - هل بتحتاجي انك تدخلي صباك و ترجعي الورم علشان تعرفي تعملي بول

C-Rectal

Dyschasia

هل في صعوبة في البراز او بتحتاجي ترجعي السقوط علشان تعرفي تعملي تواليت

Investigations

اي فحوصات تحاليل ما قبل العملية - اشعة تلفزيونيه على البطن والمهبل

Treatment

اي علاجات تحضير للعملية او علاج للقرح وناويين يعملوا ايه

Diagnosis

⇒ Age, parity, genital prolapse most probably (vaginal or uterine)

⇒ Recurrent or not

⇒ Complication, incontinence

⇒ Association, asthmatic,

⇒ For further examination & investigation الشياكه

Genital prolapse sheet

Complaint

Mass protruding from the vulva of 6 years duration

History of present illness:

The condition started 6 years ago after her last delivery which was prolonged unattended home delivery. Then the patient started to feel sense of lack of support in the perineum progressed to sense of heaviness mostly by the end of the day & dragging pain especially on straining. 1 year later the patient noticed the appearance of a vulval swelling which appears on straining & decreases on lying down. The mass ran a slowly progressive course over the last 5 years. Now it is persistent & doesn't return except by digital pressure. The condition is not associated with hernia, varicose veins or piles. The condition is associated with dyspareunia, lower abdominal pain & backache. There is congestive dysmenorrhea associated with menorrhagia & increased vaginal discharge which is whitish, odorless & not associated with itching. The patient complains of ulcers on the swelling. There is no history of infertility. The patient has urinary symptoms in the form of frequency associated with lack of sense of satisfaction after the end of the act with the need to reduce the mass digitally to complete the act of micturition. 2 month ago the patient noticed escape of urine on coughing or sneezing but no symptoms suggestive of pyelonephritis (as fever, vomiting & loin pain). There are symptoms of rectocele in the form of rectal heaviness & the patient need to reposit the mass in order to complete the act of defecation. The patient sought medical advice, surgery was the plan. Blood & urine investigations were done but no available reports & now she is admitted in the hospital. Review of other body systems revealed no abnormality.

Diagnosis:

A 45 years old lady P6, with genital prolapse mostly cystocele associated with stress urinary incontinence for further examination & investigations.

Another example

Complaint

Something protruding from the vulva of 1 year duration

History of present illness

The condition began 1 year ago when the patient started to complain of something protruding from the vulva in the size of a large lemon, that gradually increased in size, the condition was associated with difficulty in micturition up to using the hands to reposit the swelling to complete micturition, the patient also complains of dysuria, frequency and urgency but no hematuria, the condition was also associated with a continuous dragging lower abdominal pain, the patient complains of excessive watery vaginal discharge (leucorrhea) but no history of menorrhagia or congestive dysmenorrhea, no history of rectal troubles, other system review reveals no abnormality

Genital prolapse with urinary Incontinence

Complaint

Involuntary escape urine of 2 months duration

History of present illness

The condition began 1 year ago when the patient started to notice something protruding from the vulva in the size of a small lemon that was of gradual onset and progressive course, No history of lower abdominal pain or back pain, no history of dyspareunia, menorrhagia, leucorrhea or dysmenorrhea, The patient complained of recurrent attacks of dysuria, frequency and urgency that responded to oral antibiotics, no history of rectal troubles, 2 months ago the patient started to complain of urinary incontinence in the form of stress urinary incontinence as she stated that she was incontinence only upon coughing, laughing or straining, no history of dripping of urine after urination, no history of hesitancy or urgency.

Past history: previous surgery for prolapse

QUESTIONS

What is the definition of prolapse?

Vertical descent of any genital organ ($\pm$ urinary bladder, rectum, ovary prolapse with RVF).

What are the classifications of genital prolapse?

(Cystocele (commonest) > uterine > rectocele > urethrocele)

1- Uterine prolapse (procedentia):

- ⇒ **1st degree:** the cx is below the level of ischial spine.
- ⇒ **2nd degree:** the cx is outside the vulva.
- ⇒ **3rd degree:** the uterus is outside the vulva (complete procedentia).

2- Vaginal prolapse:

- ⇒ **Anterior vaginal wall:**
 - ★ **Upper 2/3 :** Cystocele (between the bladder sulcus & transvaginal sulcus).
 - ★ **Lower 1/3 :** Urethrocele (between transvaginal & submeatal sulci).
- ⇒ **Posterior vaginal wall:**
 - ★ **Upper part:** Enterocoele (Hernia of DP).
 - ★ **Lower part:** Rectocele
- ⇒ **Vault prolapse:** more common in subtotal than total hysterectomy.

3- Combined prolapse:

- ⇒ **Utero-Vaginal:** uterus descends followed by the Vagina (Acystocelic prolapse).
- ⇒ **Vagino-Uterine:** large cystocele $\rightarrow$ traction on uterus (Cystocelic prolapsed).

What are the signs elicited in case of prolapse?

⇒ General	⇒ Abdominal
★ Anemia ★ Chest → bronchitis ★ RF	★ A cause → ascites, masses ★ Complication → tender loin ★ Association → spina bifida, visceroptosis
⇒ local examination	⇒ Special tests
★ Inspection: ○ Lithotomy ○ Type & degree ○ Stress Incontinence & complication ★ Palpation: ○ Raise bladder neck + cough test → SUI "Bonney test" ○ Tone of levator ani ○ Gurgling sensation on reduction of enterocele ○ Diff 2nd & 3rd degree UT descent ★ PV: ○ 1st degree UT descent ○ Gurgling sensation in enterocele & associated condition	★ Bimanual: ovary, tube, uterus for masses. ★ PR: diff. enterocele from rectocele ★ Malpus test: (combined PR & PV) : as PR ★ Volsellum test: to see max degree of UT prolapsed ★ Sound: diff. prolapse from cong. Cx elongation ★ Catheter test in cystocele

How to diagnose hidden stress incontinence in a case of prolapse?

By Bonney's urethral elevation test- Youseff test- Marshal test

What are the swellings which may protrude in the vagina?

- Anterior vaginal wall: cystocele, Gartner cyst, bladder diverticulum
- Posterior vaginal wall: rectocele, enterocele, dermoid cyst
- Uterus: uterine prolapse, uterine inversion, polyps

How to differentiate cystocele from urethrocele?

By inspecting the site

-Upper $\frac{3}{4}$: cystocele (between bladder sulcus & transverse vaginal sulcus)

-Lower $\frac{1}{4}$: urethrocele (between transverse vaginal sulcus & Submeatal sulcus)

What is the suitable treatment for?

- A 45 y old ♀ + 2nd degree uterine descent + completed her family. (VH+PFR)
- A 22 years old female with 2nd degree uterine descent. (sling)
- Vault prolapsed (SSF)
- Cystorectocele (classical repair)

What are the causes of vault prolapse?

- ⇒ Sub-total hysterectomy
- ⇒ Bad choice of operation if abdominal hysterectomy in presence of weak pelvic floor
- ⇒ Enterocele not corrected
- ⇒ Vaginal hysterectomy without pelvic floor repair if needed

What is the value of Cusco speculum examination?

- To see ulcers
- To take a swab for infections

What are the complications of surgery?

★ **Immediate:**

- Complication of anesthesia, DVT, PE
- Injury to urinary bladder, rectum
- Infection to wound, UTI, pelvic infection
- Hge: 1ry, 2ry (slipped ligature or dislodged clot) or reactionary (infection)

★ **Delayed:**

- Vaginal stenosis → Dyspareunia & soft tissue obstruction
- Fistula
- Recurrence of prolapse (5-10%)
- Special complication according to the type:
 - Anterior repair: UR, SUI, Bladder injury
 - Post. Repair: Dyspareunia
 - Abd. Sling: Intestinal obstruction, Ureteric injury, LL pain (psoas spasm)
 - Fothergill op.: Infertility, Incompetent cx, Habitual abortion, cx stenosis & dystocia,
 - Le Forte: Apreunia, No D&C if postmenopausal bleeding occurred

Which repair will you start with cystocele or rectocele?

- Cystocele as it is deeper in the vagina

What is the name of combined anterior & posterior repairs?

- Classical repair

What is the most important preoperative investigation?

- Hb level

Would the patient deliver vaginal or CS?

- VD is possible with generous episiotomy +/- prophylactic forceps OR
- CS is preferable by many

What are the causes of recurrence?

◆ 5-10% usually in the 1st 2 years.

◆ Surgical at least 3- 6 m following previous op & treat the cause

⇒ **Preoperative:**

- ★ Developmental weakness.
- ★ Undiagnosed enterocele.
- ★ Bad preparation.

⇒ **Operation:**

- ★ Bad dissection or bad choice of operation.
- ★ Excessive shortening of the vagina.

⇒ **Postoperative:**

- ★ Infection, Hge.
- ★ Rapid pregnancy & delivery.
- ★ Recurrence of predisposing factor.

How to avoid vault prolapse during hysterectomy?

By ligating the Mackenrodt ligament to the vault

How to differentiate 2nd from 3rd degree uterine prolapse?

If fingers could be approximated above the swelling ...3rd degree

What is the alternative if the patient does not want to remove the uterus?

❖ **Behavioral changes** (exercise, ↓ smoking,)

❖ **HRT** in menopause.

❖ **Physiotherapy or Pessary** (Ring or Smith Hodge pessary)

⇒ **Indications:**

1- Too young or too old

2- Unfit or refusing surgery

3- During pregnancy or shortly after delivery

⇒ **How to test it:** place the pessary and ask the pt strain: if remained in place it is a fitting size & if not, use a larger one. It must be changed every 3 m

⇒ **Complications:** Infection, Ulceration, discharge & discomfort if too large

❖ Sling (abd) better than Fothergill's (vag)

What are the other types of displacement?

Anterior	Acute RVF	Posterior	RVF (20%)
Upward	Pregnancy	Downward	Prolapse
Left lateral	Levo-rotation	Right lateral	Dextro-rotation

What are the types of dyspareunia?

1. **Superficial:** Vulva, vagina, cervix: inflammation, tumors, vaginismus (psychological)

2. **Deep:**

❖ **Uterus** ...fixed RVF, parametritis

❖ **Tubes** ...PID

❖ **Ovaries** ...prolapse, swelling

❖ **Douglas pouch** ...endometriosis, pelvic abscess, hematocele

❖ **Rectum** ...fissures, piles

What are the factors that maintain the uterus in its place?

1- The ligaments

2- Pelvic floor muscles (indirect)

3- AVF position of the uterus

4- Relation to surrounding structures & peritoneal reflections

What is the difference between enterocele & hernia of Douglas pouch?

What is complete uterine procedentia?

3ed degree uterine descent.

What is the most important step in?

- ❖ Anterior colporrhaphy
- ❖ Posterior colporrhaphy
- ❖ Abdominal sling
- ❖ Preventing vault prolapse
- ❖ Repair of enterocele

What is Moscowitz procedure?

It is the abdominal repair of enterocele by reduction of the contents & removes the sac with obliteration of the Douglas pouch

What is the operation used for Stress Urinary Incontinence in prolapse?

- ❖ Burch colposuspension
- ❖ Kelly's sutures

What are the types of RVF uterus?

- 1- **Mobile RVF:** manually corrected (2 fingers in the anterior fornix push the cervix backwards and abdominal hand pull the fundus forwards) > corrected with no pain.
- 2- **Fixed RVF:** not correctable manually & if tried it causes severe pain

What are the degrees of RVF?

- 1- 1st degree: the fundus is directed toward the promontory of the sacrum. The uterus is in one line with the vagina
- 2- 2nd degree: the fundus is directed towards the sacral concavity. The cervix directed forward
- 3- 3rd degree: the fundus is directed towards the tip sacrum. The cervix directed forward & upwards

What are the symptoms of RVF?

- Asymptomatic: commonest
- Symptoms d.t pelvic congestion: congestive dysmenorrhea, menorrhagia, leucorrhea
- Sexual symptoms: deep dyspareunia
- Subfertility d.t to associated uterine congestion or the cause is fixed RVF or poor relation bet the seminal pool & the cervix
- Symptoms d.t stretch of ligaments → low back pain
- Pregnancy complications:
 - No effects (commonest)
 - Abortion bet 12-14 wks
 - Incarceration: urinary retention
 - Sacculation: leads to rupture uterus

What is the therapeutic test in RVF?

- Manual correction if mobile, then insert Hodge Smith pessary for one month, if all symptoms disappeared while it is in place & re-appearance when it is removed, the symptoms are d.t RVF and operative ttt is indicated

What is the ttt of RVF?

- A- Prophylaxis: avoid fixed RVF, early ttt of PID & endometriosis plication of the round ligament after myomectomy or ttt of endometriosis.
- B- Active ttt:
- Pessary: Hodge Smith pessary.
 - Surgery: Modified Gilliam's operation: (Plication & suturing of the round ligament to the anterior rectus sheath), plication of the round ligament.

What is the differential diagnosis of impacted RVF gravid uterus?

- 1- Causes of acute abdomen in early pregnancy.
- 2- Cause of retention of urine during pregnancy.

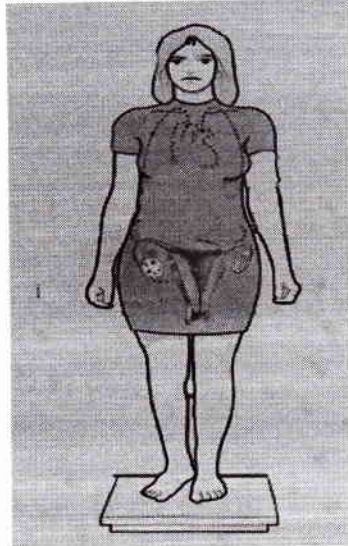
What is the ttt of RVF gravid uterus?

- 1- Rubber catheter in prone position (99% of causes are corrected).
- 2- If failed do manual correction + pessary to be removed after 14th wk.
- 3- Laparotomy (if fixed by adhesions) to cut the adhesion.
- 4- For anterior sacculation delivery must be by elective C.S.

Pelvi-abdominal mass (Issue brief)

Causes:

- ♣ Trauma
- ♣ Pregnancy
- ♣ Inflammatory
- ♣ neoplastic



Symptoms:

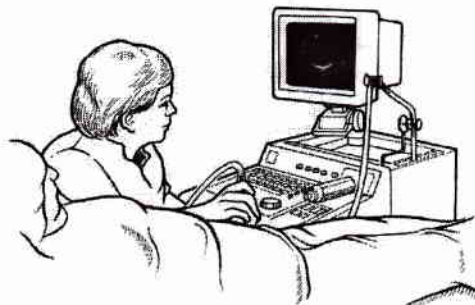
- ♣ OCD
- ♣ Pain
- ♣ Bleeding
- ♣ Discharge

Complications:

- ♣ Urinary complications
- ♣ GIT complications
- ♣ Pressure manifestations

Investigations:

- ♣ US
- ♣ Tumor markers



Treatment:



Pelvi-abdominal mass

Complaint

Abdominal swelling of () month duration

History of present illness

A-Cause

Trauma

Pregnancy

الدورة حصل و تأخرت عليكي او بتحسي بحركة لعبي الطفل في بطنك

Inflammatory

هل سببلك ارتفاع في الحرارة مع رعشة واجهاد

Symptoms suggestive of tuberculosis:

هل في سخونة او عرق بالليل مع فقدان للشهية والوزن؟

هل عندك كحه بدم او اتحزتي قبل كده في مستشفى للصدر

Neoplastic: (rapid rate of growth or malignant ascites, cachexia, lung secondaries, liver secondaries, brain secondaries or breast secondaries)

هل الورم بيكبر بسرعه او حسيتي ان بطنك بتكبر بسرعه او نقص واضح بالوزن او كحتي دم او عندك صداع شديد مع زغلله وقيء هل عندك اورام بالثدي او عملتي اي عملية في الثدي

B-Clinical picture

Onset Course Duration

ازاي بدا ومن امتى وبيكبر بسرعه ولا ببطء

Associated pain, discharge, menstrual irregularities

هل مصحوب بالام او افرازات غير طبيعيه او اضطرابات بالدوره

C-Complications

- ❖ Urinary complications (dysuria, frequency, loin pain)
- ❖ GIT complications (nausea, vomiting, heart burn, constipation, diarrhea, or tenesmus)
- ❖ Pressure symptoms (dyspnea, palpitation, lower limb edema, dyspepsia, frequency of micturition)

هل عندك مشاكل في التبول او حرقان او بتروحي الحمام كثير او عندك الم في جنبك هل عندك مشاكل في المعده وهل بتحسي بنهجان او بضربات قلبك او ورم بالرجلين او صعوبه في الهضم او زياده في عدد مرات التبول.

Pelviabdominal mass sheet

Complaint

She is complaining of abdominal swelling of 9 months duration.

History of present illness

The condition was accidentally discovered during abdominal examination & consultation for dyspepsia & vague abdominal pain. The mass is increasing in size. The onset is not related to trauma & not preceded by a period of amenorrhea. The condition is associated with low abdominal pain, dull aching in charac-

ter, intermittent in course with no radiation. There are no constitutional symptoms in the form of fever, rigors, headache & malaise. The condition is associated with a change in the character of menstruation in the form of menorrhagia; the patient had to change 8 pads/ day for 9 days instead of changing 2pads/day for 4 days. There are no urinary symptoms (frequency, dysuria, loin pain, fever & rigors). There are no pressure symptoms as dyspnea, palpitation, lower limb edema, & frequency of micturition. There is no history suggestive of malignancy as rapid rate of growth, loss of body wt, symptoms of liver secondaries as right hypochondrial pain, jaundice, or symptoms of lung secondaries as chest pain, dyspnea, hemoptysis, or symptoms of increased ICT as headache, blurring of vision & projectile vomiting or rapid abdominal enlargement for malignant ascites. The patient sought medical advice, US was ordered & done & revealed fibroid uterus. The patient has done routine preoperative investigations as urine & blood tests. Also chest X-ray & ECG. She's waiting now for doing an operation for her condition. Review of other body systems revealed no abnormality.

Diagnosis

A 37 years old patient, P4 with pelviabdominal mass most probably fibroid uterus

Pelviabdominal mass sheet

Another example

Complaint

The patient is complaining of an abdominal swelling of 5 months duration

History of present illness

The condition began 5 months ago when the patient began to complain of abdominal enlargement of gradual onset and progressive course, The abdominal swelling was not associated with menstrual irregularity not preceded by a period of amenorrhea, The condition was associated by upper GIT dyspeptic symptoms in the form of nausea, vomiting and heart burn with sense of upper abdominal fullness, The condition was also associated with anorexia of 3 months duration that caused her marked loss of body weight

No symptoms suggestive of urinary tract involvement as loin pain, hematuria, dysuria, frequency and urgency

No symptoms suggestive of GIT involvement as dyschasia or hematochasia

No symptoms suggestive of distant metastasis as hemoptysis, jaundice or other swellings of the body. No history of fever, no history of vaginal discharge, other system review reveals no abnormality

-Obstetric history:

-Past history:

-Family history:

Diagnosis

P6 pelviabdominal mass for investigation



QUESTIONS

What is the D.D of pelviabdominal mass?

- 1- Large ovarian tumor Fetus
- 2- Fibroid
- 3- Feces and flatus due to intestinal obstruction
- 4- Full bladder: insert urinary catheter to ensure that the bladder is empty
- 5- Fat (obesity), Fluid (ascites)

What's the important investigation done in cervical fibroid?

❖ IVP

What's the investigation done before myomectomy for medico-legal reason?

❖ HSG for tubal patency

What are the precautions taken during myomectomy to decrease intra-operative hemorrhage?

★ **Preoperative:**

- Post menstrual, Gn RH for 3m preoperative
- Corrects anemia & prepare blood.

★ **Intra-operative:**

- Temporary closure of uterine a. by Foley's catheter or Bonney's myomectomy clamp & temporary closure of ovarian ant by ring forceps.
- Midline anterior uterine incision is the least vascular.
- Avoid many incision of uterus: do the least possible incisions with tunneling to bring myoma.
- Meticulous closure if the bed of the tumor.
- Methergine 0.25 mg IM, ADH (20 IU in 20 ml saline) in the tr bed to ↓ hge.

What is the commonest symptom of fibroid?

❖ Asymptomatic.

Could amenorrhea be a symptom?

❖ No, except if she became pregnant.

Would you operate upon a pregnant fibroid uterus?

No, except if Acute abdomen ...red degeneration (failed medical treatment & subserous fibroid), torsion, infection or internal hemorrhage (rupture blood vessel on the surface).

What is the character of fibroid?

Firm, mobile, non tender.

When to find a soft fibroid?

Pregnant, degenerated, malignant (brain like).

How could you differentiate by history from?

- Ovarian swelling: distension, dyspepsia, discomfort.
- Tubo-ovarian complex: fever, lower abd .pain, discharge.
- Endometriosis: infertility, pain, bleeding.

What is the most important preoperative investigation?

Hb %

What is the treatment of a patient with fibroid uterus?

◆ According to:

- ⇒ Age, parity and if desire pregnancy
- ⇒ Site — size — no. of fibroid or malignant changes.
- ⇒ Pt refusing or unfit for surgery.

◆ General: → vitamins, minerals & correct anemia.

◆ Conservative: asymptomatic, small & near menopause (follow up/ 6m).

⇒ Medical:

- ★ Gn RH for 3 m (not for long time for fear of osteoporosis) ↓ size by 50%.
- ★ Antiestrogens, danazol & progestins may be used.
 - If the patient refuse surgery or unfit.
 - Preoperative preparation
- ★ In pregnancy: red degenerations (antipyretics, analgesics & anti-emetics).

◆ Surgical treatment:

- ⇒ In symptomatic cases or uterine size > 12 weeks.
- ⇒ Infertility, Multiple huge fibroids or suspected malignancy.

⇒ Type of surgery:

★ Conservative: Myomectomy

- Young patients
- Who desire pregnancy
- Small number of fibroids

★ Radical: Hysterectomy

- Old (40 years)
- Complete family or sterility
- Large number, broad ligamentary or cervical or malignant change
- Recurrence after myomectomy or uncontrollable hemorrhage during myomectomy

★ CS hysterectomy in old patients with multiple fibroids

Why some prefer to add D&C?

- Remove hyperplastic endometrium, avoid symptoms recurrence
- Histopathology: exclude associated endometrial hyperplasia or carcinoma

What do you expect about the future fertility of a patient had a previous myomectomy?

- ❖ May be affected, adhesions are expected so HSG should be done after 3-6 month to re-evaluate.

What is the possibility of malignant transformation of the fibroid?

- ❖ 0.5%

How to differentiate between fibroid & ovarian swelling during ex.?

Fibroid moves with the movement of the cx, others are difficult as both ovarian & fibroid swellings may have or may have not:

- ❖ Lower margin
- ❖ Mobility, tenderness
- ❖ Central or lateral

Could fibroid enlarge the cervix?

Barrel shaped cx

What are the other causes of barrel shaped cervix?

Cancer cervix

Chronic hypertrophic cervicitis

Products of conception (cx abortion or ectopic)

What are the causes of pelviabdominal swelling & bleeding?

- Complications of pregnancy.
- Uterine tumors ...fibroid or sarcoma
- Inflammatory ...large tubo-ovarian complex
- Ovarian tumors if ...functioning, pelvic congestion, metastasis to uterus

What's the prognosis of a case of fibroid uterus after myomectomy?

- 1. Persistence of symptoms** e.g. bleeding due to ↑ uterine size, tumor recurrence, underlying hormonal imbalance.
- 2. Recurrence:** 10-15% within 10ys (missed fibroids or new fibroids).
- 3. Intra operative bleeding.**
- 4. Intrauterine or intra-abdominal adhesions.**
- 5. Rupture in next pregnancy.**

What are the precautions taken during myomectomy to decrease intra-operative adhesions?

- ★ Least possible incisions.
- ★ Placation of the round ligaments to ↑ AVF position.
- ★ Corticosteroids, dextrose, lactated ringer, intra-abdominal to ↓ adhesion.
- ★ Avoid post wall incision (do Bonney's hood operation).
- ★ Perfect hemostasis

What are the types of myomectomy?

- ★ **Abdominal approach** (conventional)
- ★ **Vaginal:** if fibroid polyp < 8 weeks pregnancy size the polyp is grasped until the pedicle which is cut by a scissor if thick of removed piece meal.
- ★ **Laparoscopy:** if small sub serous with less hospital stay.
- ★ **Hysteroscopy:** if small sub mucous (< than 5 cm)
- ★ **D & C polypectomy:** if small sub mucous

When does the fibroid uterus fail to shrink?

In calcification & malignancy

Which has a greater concentration of receptors: a leiomyoma, endometrium, myometrium?

Q. What are the complications of ovarian tumor?

- 1. Torsion.**
- 2. Hemorrhage into the cyst.**
- 3. Rupture.**
- 4. Infection.**
- 5. Incarceration.**

Q. What are the functioning ovarian tumors?

1. Feminizing ovarian tumors (Granular, Theca cell tumor, Brenner).
2. Virilizing ovarian tumors (Sertoli, Leydig cell tumor)
3. Dysgerminoma (HCG & LDH).
4. Struma ovarii (thyroxin).
5. Choriocarcinoma of the ovary (HCG).
6. Embryoma (HCG & α Fp).
7. Endodermal sinus tumor (α Fp).

Q. What are the causes of ascites in malignant ovarian tumors?

1. Obstruction of lymphatics in the diaphragm.
2. Oozing from the surface.
3. Hepatic nodules $\rightarrow$ portal hypertension.
4. Cachexia & hypoproteinemia.
5. Pressure on the renal blood vessels $\rightarrow$ $\downarrow$ urine output.

Q. What are the causes of hydrothorax in cancer ovary?

1. Secondaries in the lung.
2. Communications between the pleura & the peritoneum especial on the Rt. Side.

Q14: what are the cystic swellings of the vulva?

- Gartner's cyst, endometriosis, dermoid cyst

Q3: what are the causes of solid vaginal swelling?

- 1- Benign neoplasms: papilloma, fibroma or malignant: 1ry or 2ry
- 2- Vaginal adhesion, granuloma following hysterectomy

Q1: What are the causes of true vulval swelling?

- 1- Congenital: hypertrophy of clitoris in congenital adrenal hyperplasia
- 2- Hematoma: edema, varicose vein
- 3- Inflammation as condyloma lata or accuminata
- 4- Retention cysts: Bartholin cysts, inclusion dermoid cyst.
- 5- Hydrocele of canal of Nuck
- 6- Malignant lesions

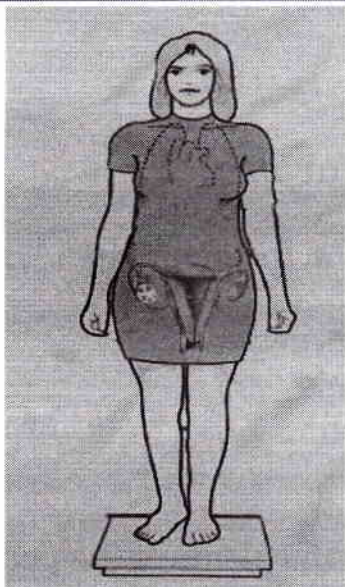
Q2: what are the causes of cystic vaginal swelling?

- 1- Gartner's cyst (Wolffian duct remnant) in the lateral wall of the vagina. The 2nd most common cause after dermoid cyst.
TTT: excision or marsupilization.
- 2- Implantation dermoid cyst, hematomas, urethral diverticulum, endometroid cyst & Vaginitis emphysematosa: bullae filled e air d.t tri-chomonas or bacterial vaginitis. TTT: metronidazole

Genito urinary fistula & incontinence (Issue brief)

Causes:

- ♣ Congenital
- ♣ Trauma
- ♣ Inflammatory
- ♣ Neoplastic
- ♣ Miscellaneous



Symptoms:

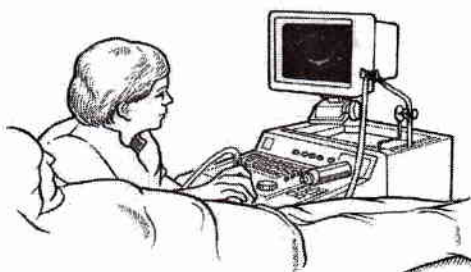
- ♣ OCD
- ♣ Desire for micturition
- ♣ Associated prolapse

Complications:

- ♣ Pruritis
- ♣ Suprapubic pain

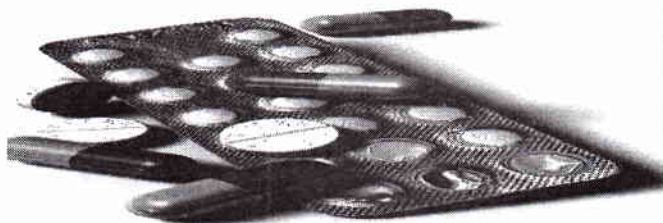
Investigations:

- ♣ Urine analysis
- ♣ Urodynamics
- ♣ Renal function tests
- ♣ US



Treatment:

- ♣ Any medical treatment
- ♣ Previous repair



Genito urinary fistula & incontinence

Complaint

Failure of voluntary control of micturition

History of present illness

A-Cause

Congenital

هل المشكلة موجودة من واتي صغيره

Trauma: after delivery, forceps, Gyn operations

ولا بعد ولاده هل كانت الولاده متعثره او طويله وهل استخدم الجفت ولا ولدت قيصري ولا بعد عمليه اخرى وهل كان فيه مضاعفات اخرى

Inflammatory: FAHM

هل ظهرت هذه المشكله بعد فتره من الهزال والسخونيه؟

Neoplastic: Masses

هل لاحظتني فقدان للوزن مع ظهور اورام؟

Miscellaneous: Irradiation

هل كنتي بتا خدي اي اشعاعات؟ وليه؟ واد ايه؟

B-Clinical picture

OCD

ازاي بدت ومن امتى وبتزيد ولا بتقل

If there is any desire for micturition, associated prolapse

هل بتحسي برغيه انك عايزه تدخل التواليت؟ وهل عندك سقوط مهبلي؟

C-Complication

Pruritis

هل في هرش بين الفخذين

loin pain OR suprapubic pain

هل في الم في جنبك او اسفل البطن

Investigations

عملتي اي تحاليل او ديناميكيه البول

Urine analysis, urodynamics, renal function tests, US

Treatment

هل اخدتني اي ادويه او عملتي اي عمليات للتصليح وكانت انتيجه ايه

Genitourinary fistula sheet

Complaint:

She complains of continuous involuntary dripping of urine of 5 months duration.

History of Present Illness

The condition started 5 months ago when the patient experienced continuous involuntary dripping of urine with a desire to micturate, after removal of urinary catheter following TAH by 24hours, suggestive of true urinary incontinence due to surgical trauma (mostly due to vesicovaginal fistula). She sought medical advice and was admitted to the hospital on 1/4/2000.

There is no escape of drops of urine when the intraabdominal pressure is raised by coughing, laughing or sneezing. Urethrometry was normal suggesting no genuine stress incontinence.

There is mild itching in the thigh and vulva mostly due to pruritis vulvae.

There is dysuria, frequency and urgency suggestive of urinary infection.

There is no history of vaginal bleeding, excessive vaginal discharge or lower abdominal pain. There are no palpable abdominal or vaginal masses, no mass protruding from the vulva.

Other systems review revealed no abnormality

PROVISIONAL DIAGNOSIS

47 years old lady, P9+S, with true urinary incontinence after TAH due to surgical trauma, mostly Vesicovaginal fistula. She is diabetic, for further examination & investigation

Urinary Incontinence sheet Another example

Complaint

She complains of inability to control micturition of 7 months duration.

History of present illness

The patient complains of stress urinary incontinence of 7 months duration following immediately total abdominal hysterectomy & bilateral salpingoophorectomy & colposuspension due to large uterine fibroid. There is dysuria, frequency, urgency & nocturnal enuresis; there is stress urinary incontinence with dribbling of urine on increased intraabdominal pressure as sitting, sneezing & coughing. She is unable to control the process of micturition either with or without fullness of the bladder. She came here & admitted to the hospital where urodynamic studies were done revealing detrusor instability. Medical treatment was given to her in the form of tablets for 40 days (1 tab/ day) & another drug (1 tablet 3 times/ day) for one month, but this failed to control the condition.

There is no vaginal bleeding or discharge, no pruritis vulvae, no galactorrhea or hirsutism. No symptoms suggestive of GIT affection as diarrhea or constipation, no symptoms suggestive of chest affection as cough, expectoration & hemoptysis & no symptoms suggestive of cardiac affection as dyspnea, orthopnea or paroxysmal nocturnal dyspnea.

Provisional diagnosis:

48 years old lady, P4+0 (4 living), post hysterectomy & colposuspension stress urinary incontinence with detrusor instability.

QUESTIONS

What are the causes of fistula?

Congenital- trauma (direct, surgical) - inflammatory- neoplastic - miscellaneous as irradiation

What are the investigations of a case of fistula?

- ❖ hysteroGRAPHY in uterovesical fistula
- ❖ Methylene blue test
- ❖ IVP, urine analysis, kidney function tests
- ❖ Endoscopies (cystoscopy, urethroscopy, cystoscopy & ureteric catheter)

What is the treatment of vesico vaginal fistula?

- ❖ Conservative: in small fistulae
- ❖ Surgical: either abdominal or vaginal approach (Sim's operation or de-doubling)

What is the differential diagnosis of incontinence?

1- Other types of urinary incontinence:

- a- SUI
- b- Urgency incontinence
- c- Fake incontinence (retention with overflow)
- d- Nocturnal enuresis

2- Types of genitourinary fistula: ureterovaginal, vesicovaginal & ureterovaginal

What are the mechanisms that keep continence?

A- Continence at rest:

1. Urethral closing pressure (50cmH₂O) > intravesical pressure (5cmH₂O).
2. Hermetic seal by the submucosal plexuses.
3. The intrinsic urethral muscles (smooth & striated).
4. Hydrostatic pressure at bladder neck < 10cmH₂O.
5. Tension in the bladder wall: due to higher control distensibility occurs >>> no rise of intravesical pressure.
6. Post urethrovesical angle (Functional not anatomical)
At rest = 100-120°, at voiding = 180.

B- Continence at stress:

1. 2 Synchronous actions: The bladder neck is pulled upwards & forwards while the bladder base is pulled downwards & backwards >> urethral kink.
2. Extrinsic striated muscle contracts at stress to maintain urethral pressure.
3. The presence of the proximal part of the urethra & bladder base above the urogenital diaphragm so the intra-abdominal pressure will be distributed equally on the bladder & the urethra >>>> sum = 0.
4. Urethral supports (Hammock effect): of the pubocervical fascia

Define stress urinary incontinence

- ❖ Involuntary loss of urine with any act that ↑ intra-abdominal pressure.

What are the special tests elicited in a case of incontinence?

- ◆ **Cough stress test:**
 - ⇒ **Bladder** is moderately full & the patient is in lithotomy position & ask pt to cough,
 - ⇒ **If -ve** → repeat while the perineum is depressed by 2 fingers to eliminate the reflex Contraction L.A.
 - ⇒ **If -ve** → repeat in standing position
- ◆ **If stress test is +ve with prolapse:**
 - ⇒ **Bonney T:** repeat cough test + 2 fingers inserted into the lateral vaginal fornices
 - ⇒ **Marshall T:** cough test + Allis clamp elevates the ant vaginal wall
 - ⇒ **If became -ve** = it is due to descent not sphincteric weakness.
- ◆ **If stress test is -ve with prolapse:**
 - ⇒ **Youseff test:** Reduction with Volsellum pushing the cervix
 - ⇒ **Pessary test:** Create the effect of surgical reduction
 - ⇒ **If still -ve** = normal & if +ve = hidden stress incontinence.
- ◆ **Bulbo-cavernous reflex test:** denote intact sacral region
- ◆ **Q tip test:**
 - ⇒ A lubricated cotton swab is inserted in the urethra & patient strains
 - ⇒ Normally the change in swab angle <30°
 - ⇒ If ranges from 30-60° → hyper-mobile bladder neck.

What are the investigations done in SUI?

A. **Basic tests:** Midstream urine analysis, Urinary diary: fluid chart, Pad test: simple (1hr) or extended (1 day)

B. **Urodynamics:**

1- Cystometry: ★ Normal residual urine (50ml) ★ Normal bladder capacity & sensation (1st sensation at 150 ml & max at 400 ml) ★ No involuntary detrusor contractions ★ Urinary leakage on straining with no rise in detrusor pressure ★ Pressure at rest 5cm H₂O ★ Voiding pressure 60-70 cm H₂O If more obstruction	2- Urethrometry: ★ ↓ functional length + ↓ closing pressure of urethra ★ Valsalva leak point pressure ★ Static & dynamic (on series of cough) urethrometry
3- Cystourethro-metry: Combined simultaneous 1+2	4- Uroflowmetry: ★ Assess occult voiding problem before surgery ★ Normal rate 25-50 ml/sec

C. **Radiology**

- ⇒ **Video-cystourethrography:** Loss of angle, bladder neck descent
- ⇒ **Micturating cystourethrography:** to assess the angle, filling defects, fistula
- ⇒ **U/S:** Position of bladder neck

D. **Urethroscopy**

E. **EMG:** to evaluate any muscular or nerve damage.

What are the grades of SUI?

- ❖ Grade 1: Incontinence with severe stress (coughing).
- ❖ Grade 2: Incontinence with moderate stress.
- ❖ Grade 3: Incontinence with mild stress. (Standing).

What is the difference between SUI & DI?

	SUI	DI
Def	-Involuntary loss of urine during straining, coughing, sneezing - increased intra-abdominal pressure in absence of any detrusor activity	-Uninhibited detrusor contractions leading to involuntary loss of urine
Etiology	Difficult deliveries: injury to urethral sphincter, levator ani	-Local bladder irritation (cystitis) or neurogenic
C/P	Immediate loss of a small spurt of urine upon cough may be mild, moderate, severe	Urgency, long gush (stream) of urinebefore reaching a convenient place
Inv	Urodynamics(Cystometry) shows the rise of intraabdominal pr over the urethral pressure Urine analysis (a must) to exclude infections	Urodynamics (show irregular detrusor contractions occurring after a while of provocation)
Ttt	Surgical 1-Vaginal :Kelly's suture , TVT 2-Abdominal: -Burch colposuspension -Laparoscopic sling	Medical 1-Anticholinergcs (Detrol)muscarinic antagonist 2-Tri-cyclic antidepressants 3-Muscle relaxants ...oxybutinin 4-CCB

What is the non surgical treatment of SUI?

⇒ **Prophylactic:** Good management of labor & postnatal exercises

⇒ **Conservative:**

★ **Indications:**

- Mild or Mixed SI (especially in young age).
- Refusal or CI to do surgery.

★ **Options:**

- Change life style.
- Pelvic floor exercises.
- Drugs: ERT in post menopausal females
- Vaginal cones: (20-100g) & Faradic (+)

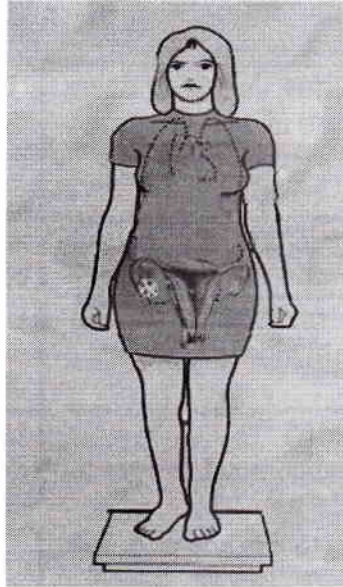
What is the surgical treatment of SUI?

- ⇒ **Vaginal op:** Kelly's sutures
- ⇒ **Abd op:** Burch & MMK op
- ⇒ **Abdomino vaginal :** TVT & Bladder neck suspension
- ⇒ **Sphincteroplasty**
- ⇒ **Periurethral injections of GAX collagen**

Amenorrhea (Issue brief)

Causes:

- ♣ True:
 - Pregnancy
 - ↑prolactin
 - ↑↓thyroid
 - congenital adrenal hyperplasia
 - Trauma
 - Infections
 - Neoplastic
 - Miscellaneous
- ♣ False
- ♣ Menopause



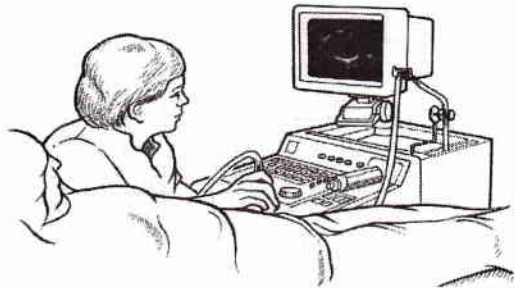
Symptoms:

- ♣ 1ry or 2ry
- ♣ Presence of 2ry sexual characters

Complications:

Investigations:

- ♣ Hormonal profile
- ♣ US
- ♣ hysteroscopy



Treatment:

- ♣ Hormonal therapy



Amenorrhea (cessation of menstruation)

لو الحالة انقطاع الدورة

Cause

A-True Amenorrhea

4 + TINM (Trauma, Infection, Neoplasia, Misc.)

- ❖ **Pregnancy:** Nausea, vomiting, abdominal swelling & abdominal movements
غممان بالنفس - قيء - ورم بالبطن - حركة زي لعب الطفل
- ❖ **Increase prolactin:** Galactorrhea
هل بترضعي او عندك افرازات بالثدي
- ❖ **Hypo or hyper-thyroidism**
- ❖ **Congenital adrenal hyperplasia**
هل يظهر شعر في وشك او صوتك اتغير
- ❖ **Trauma:** surgical trauma, obstetric hemorrhage
هل عمليتي عمليات بالمخ
- ❖ **Infection:** Asherman's
هل حصلك التهابات بعد الولادة او عمية كحت
- ❖ **Neoplastic:** Brain (Pituitary) tumors
هل بتحسي بصدااع اوز غلله وترجيع
- ❖ **Miscellaneous:** Drugs, psychological, obesity, cachexia
هل خدتي اي علاجات او اقراص هرمونات وهت عندك ازمه نفسيه او لاحظتي تغير بوزنك اما زيادة او نقص.

B-False Amenorrhea

هل بيجيك مغص اسفل البطن كل شهر

C-Menopause

hot flushes, nervousness

بتحسي بصهد ونرفزه

Clinical picture

1 ry or 2ry

هل جاتك الدورة قبل كده ولا عمرك ما شفتيها

if 1ry: presence of 2ry sexual characters (pubic hair/breast bud)

هل عندك شعر العانة وهل عندك صدر طبيعي

Investigations

هل عمليتي اي فحوصات - تحليل هرمونات - اشعه تلفزيونيه - منظار رحم

Treatment

خدتي اي علاجات او هرمونات

Diagnosis

- ❖ Age, parity, 1ry or 2ry Amenorrhea
- ❖ Probable cause & association
- ❖ For examination & further investigation

Primary Amenorrhea sheet

- ❖ Personal history: as before

Complaint

- ❖ Failure of menstruation

History of present illness

The patient started investigations for delay of menarche at the age of 16 years. She achieved normal pubertal changes including breast budding, pubic & axillary hair, growth spurt at the age of 13 years.

- 1- The condition was not associated with manifestations of increase intracranial tension as persistent headache, blurring of vision or projectile vomiting.
- 2- No history of psychological or head trauma.
- 3- No history of milk discharge from the breast
- 4- No excessive hair growth or hoarseness of voice (virilizing ovarian tumors)
- 5- No symptoms suggestive of recent body weight changes or psychological trauma or recent changes in thyroid activity (excessive wt loss, nervousness, insomnia, tremors & intolerance to hot weather) or myxedema (wt gain, hoarseness of voice, constipation, intolerance to cold weather).
- 6- There are no symptoms suggestive of TB (night sweating, night fever, loss of wt, loss of appetite, admission to chest hospitals, +ve family history of DM)
- 7- No history of cyclic lower abdominal pain associated with attacks of urine retention (cryptomenorrhea)

The patient sought medical advice 1 year ago & had done investigations in the form of US, hormonal-profile but no available reports & had received medications of non-specific nature, but no bleeding had occurred so she is waiting to do chromosomal study & diagnostic laparoscopy.

Review of other body systems showed no abnormality.

Menstrual history

No menarche till now

Diagnosis

A 17 year old girl, with 1ry amenorrhea, mostly of ovarian etiology for examination & further investigations.

Secondary Amenorrhea sheet example

Complaint

- ❖ Cessation of menstruation of 2 years duration

History of present illness

The condition started 2 years ago following her last abortion which was terminated by surgical evacuation of inevitable abortion at 9 wks gestation then in the 1st week postabortive the patient developed fever, headache, and abdominal pain with foul discharge so the patient was admitted to fever hospital & received treatment.

No nausea, vomiting or abdominal enlargement suggestive of pregnancy or Pseudocyesis). There is no nervousness or hot flushes suggestive of menopause.

- 1- The condition was not associated with manifestations of increased intracranial tension as persistent headache, blurring of vision or projectile vomiting.
- 2- No history of psychological or head trauma.

- 3- No history of milk discharge from the breast.
- 4- No excessive hair growth or hoarseness of voice (virilizing ovarian tumors).
- 5- No symptoms suggestive of recent body weight changes or psychological trauma or recent changes in thyroid activity (excessive weight loss, nervousness, insomnia, tremors & intolerance to hot weather) or myxedema (wt gain, hoarseness of voice, constipation, intolerance to cold weather).
- 6- There are no symptoms suggestive of TB (night sweating, night fever, loss of wt, loss of appetite, admission to chest hospitals, +ve family history of DM)
- 7- No history of cyclic lower abdominal pain associated with attacks of urine retention (cryptomenorrhea)

The patient sought medical advice & done investigations in the form of US, hormonal profile but no available reports & received medications in the form of tablets & injectables but no bleeding occurred. HSG & hysteroscopy were done & revealed intrauterine synechia & she's now waiting for combined laparoscopy & hysteroscope for dissection of the intrauterine adhesions.

Diagnosis

35 years, P1, 2ry Amenorrhea for 2 years mostly uterine in origin

Questions

Define Amenorrhea.

1ry: Absence of menstruation by the age of 14 years with absent 2ry sexual characters or by the age of 16 years with present 2ry sexual characters.

2ry: Cessation of menstruation for 6 months (with irregular cycles) or 3 successive cycles (with regular cycles) in a patient who was menstruating.

Mention causes & management 1ry Amenorrhea with present uterus & absent 2ndry sexual characters.

⇒ Ovarian causes.

★ Congenital causes.

- Turner \$ & mosaic turner.
- deletions of short arm of x chromosome with infantile internal & external genitalia.
- Gonadal agenesis: failure of germ cell migration may occur in ♀ or ♂ (Swyer syndrome).

★ TINM if early.

⇒ Hypothalamo-pituitary(C T I N M)

★ Congenital:-

- Hypothalamic \$:
 - Fröhlich \$: short, obese, amenorrhea.
 - Laurence Moon Biedl: as above + polydactyl +MR + Retinitis Pigmentosa.
 - Kallman: tall+ anosmia+ amenorrhea.
- Pituitary \$:

- **Simmond's**: panhypopituitarism by any cause.
- **Sheehan's**: "acquired" due to APH or PPH.
- **Levi Lorain's**: ↓GH, ↓FSH & LH.
- ★ **Trauma**: hypothalamus or pituitary surgery.
- ★ **infection**: encephalitis, meningitis
- ★ **Neoplasm**: - pituitary & hypothalamic Tr.
- ★ **Miscellaneous**: -
 - Exercise & stress induced amenorrhea.
 - Hyper-prolactinemia.
 - **Empty sella** (congenital or acquired by surgery or irradiation).
 - Anorexia nervosa, Bulimia & debilitating.
 - Functional Hypothalamic amenorrhea.

⇒ **Adrenal gland**

- ★ **Congenital adrenal hyperplasia**.
 - Failure of conversion of P to corticosteroid".
 - CCC by ↓cortisol, ↑ACTH, ↑P & ↑ androgens.

Investigations= FSH	<u>Normal</u>	→ Adrenal	→ 17 α OH Progesterone	
	<u>Increased</u> >40 ng/ml	→ Ovarian causes	→ Karyotyping	
	<u>Decreased</u> <5 ng/ml	→ Hypothalamus or pituitary	→ CT & MRI	
			→ GnRH stimulatory test	↑FSH → hypoth ↓ FSH → pit

⇒ **Treatment:-**

- ★ **If ovarian causes** → Cyclic E + P (HRT)
- ★ **Hypothalamic- pituitary causes**:
 - **If not in need of pregnancy** → Cyclic E+P
 - **If need of pregnancy**:
 - FSH & LH "1 – 2 amp IM / d from 3rd day of cycle" or
 - GnRH in a pulsatile manner every 90 min using a computerized pump with folliculometry "17 – 20 mm" & E "200 – 300 pg /ml" then add HCG "5000 – 10000 IV /IM"
- ★ **If adrenal causes** → cortisol

What are the causes & management of 2ndry Amenorrhea?

⇒ **Causes**

★ **Ovarian Causes**

- **T** → radiation, surgery, chemotherapy.
- **I** → STORCH
- **N** → ovarian tumor
- **M** → PCO, Resistant ovary syndrome (the ovary is not responding to FSH & LH), Premature ovarian failure, drugs (OCPS).

★ **Hypothalamic – pituitary(T-I-N-M)**

- Miscellaneous as
 - Empty sella \$
 - Hyper-prolactinemia
 - post pill amenorrhea
 - Pseudocyesis

★ **Uterine causes: Asherman's**

⇒ **Investigations**

★ **Exclude pregnancy** "by β -HCG", **hypothyroidism** "by T3, T4, TSH", **hyper-prolactinemia** "PRL >20 ng/ml" & **cong. adrenal H** "by 17 α OH P & DHEA"

★ **Progesterone challenge test:**

- +ve (bleeding) → Anovulation
- -ve (no bleeding)→

★ **P+E challenge test**

- +ve (bleeding)→ (Axis)→ FSH→ As before → Ovarian or H-P cause
- -ve(no bleeding)→ uterine cause→ (US, HSG, Hysteroscopy)

⇒ **Treatment**

★ **Ovarian causes: -**

- HRT
- PCO → induction of ovulation
- Thyroxin , Bromocriptin , Corticosteroid

★ **H-P causes:-**

- If need for pregnancy: induction of ovulation by FSH & LH
- If no need → HRT

★ **Uterine Causes:**

- Treatment of Asherman \$"

Causes& management try Amenorrhea with absent uterus & present 2ndry sexual characters?

Causes	Investigations	Treatment
★ Male: Testicular Feminization (TF\$) (Androgen insensitivity)	1- Karyotyping	1. <u>TF\$:</u> artificial vagina + remove the testis with HRT
★ Female: Müllerian Dysgenesis (MD\$)(cong. absence of uterus)	2- Androgen level 3- IVP + spines X - ray in MD\$	2. <u>MD\$:</u> artificial vagina

What are the clues to suspect Asherman \$?

- History ...menses getting lighter after D&C
- Investigation: HSG shows a small uterine cavity

How to avoid Asherman \$?

- Stop curettage on reaching basal endometrium (known by gritty sensation
- Aseptic technique during D&C.

Q: How to confirm this condition?

Hysteroscope

What is its value in the management of this above mentioned case?

❖ Diagnostic

	Uterine adhesions	Tubal ostia
Minimal	<1/4 involved	-Both are seen
Moderate	1/4-3/4 involved	-One is seen
Severe	>3/4 involved	-None is seen

❖ Therapeutic: adhesiolysis (better than doing it blindly by D&C)

What are the other uses of hysteroscopy in infertility?

- **Diagnostic** ...evaluation of uterine cavity & taking endometrial biopsy.
- **Therapeutic** ...adhesiolysis + way to do tubal cannulation.

What is Sheehan syndrome?

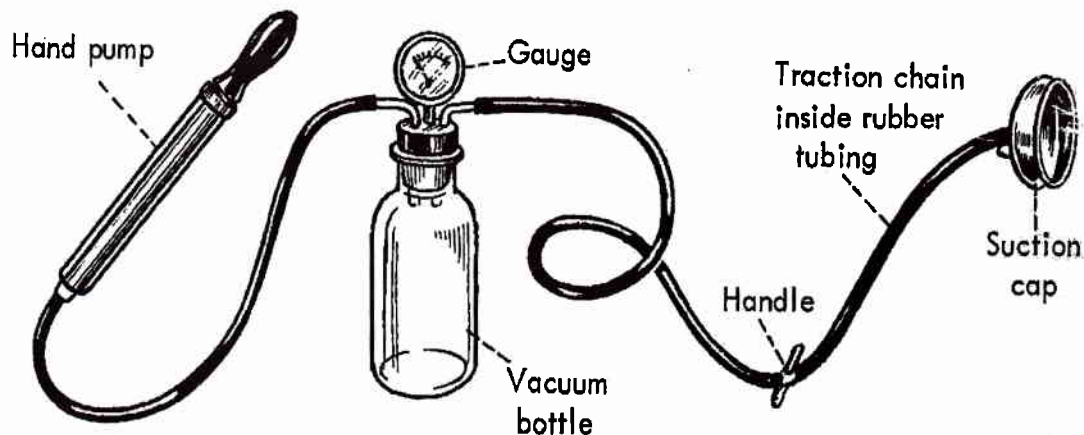
Pituitary pan hypo pituitrism following massive bleeding especially postpartum.

OBSTETRIC INSTRUMENTS

1- VACUUM EXTRACTOR (VENTOUSE) الشفط

The idea

- ◆ It is to apply traction to the fetal head through a **suction cup**.
- ◆ It is introduced by **Malmstrom** (1957) اسم العالم ده مهم
- ◆ It could not be applied to face, brow, transverse lie or breech.
- ◆ It has a cup (3 sizes 40, 50 & 60 mm diameter) attached to a vacuum pump



Uses

- 1- Prolonged 2nd stage
- 2- To shorten 2nd stage of labor مهمه جدا
- 3- Can be used when the head is transverse or oblique (traction favors rotation)

Advantages over forceps

- 1- **PASSENGER:** can be applied on
 - ✎ Unrotated occipitoposterior.
 - ✎ High head
- 2- **PASSAGES:**
 - ✎ Can be applied late in 1st stage (before full cervical dilatation)
 - ✎ It takes less space in the pelvis
 - ✎ It causes less trauma to the birth canal & less head compression
- 3- **POWER:**
 - ✎ Can be used without anesthesia
 - ✎ No excessive force is used as the cup will slip

The forceps is more suitable if urgency is needed (as fetal distress).

Contraindications

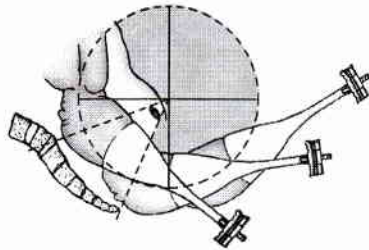
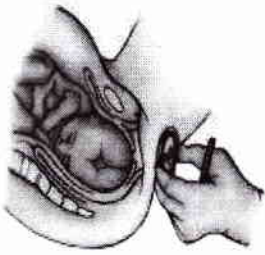
- 1- Non vertex presentation as face, brow or breech.
- 2- Prematures.
- 3- Severe fetal distress (**as it takes long time**)
- 4- When vaginal delivery is contraindicated من اساسه

Dangers

1- Injury:

- a) To the **cervix**.
- b) To the **vagina**.
- c) To the **fetal head**:
 - Scalp laceration.
 - Cephalohematoma.

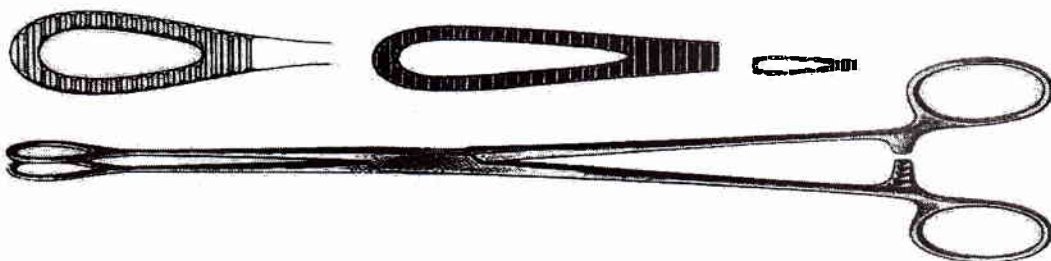
2- Prolapse of the uterus later on.



2-RING FORCEPS

Description

- ✧ It is serrated to allow good grasp
- ✧ It has a lock to be fixed at its site.



Uses

1. It is used **instead of the ovum** forceps to remove the products of conception during vaginal evacuation.
2. Catch the **soft cervix** e.g. during circlage
3. Also it is used to remove corporeal or cervical polypi after twisting them.

4. It is used to grasp the cervix especially during exploration after difficult instrumental or destructive operation to detect cervical trauma.
5. As a swab holding forceps
6. To catch a wide area of venous oozing
7. Grasp **infundibulo-pelvic** ligament during myomectomy
8. Instead of **Green Arymtage** in cesarean section
9. **Huntington operation**: abdominal treatment of uterine inversion

3-OVUM FORCEPS

Description

- ⚙ As ring forceps but there is **NO LOCK** to:
 - ◆ allow introduction (open & close) several time
 - &
 - ◆ avoid myometrial injury

Use

- ♥ It is used in evacuation of an abortion or a vesicular mole

Method

- ❖ Introduce it in the uterine cavity closed, then open & grasp
- ❖ Rotate 90° to
 - Detect contents adherent to the uterine wall
 - &
 - Avoid grasping the myometrium
- ❖ Then remove it & so on.



4- BOZEMAN'S PACKING FORCEPS

Uses

- ✧ It is used for packing the uterine cavity and / or the vagina.

Technique

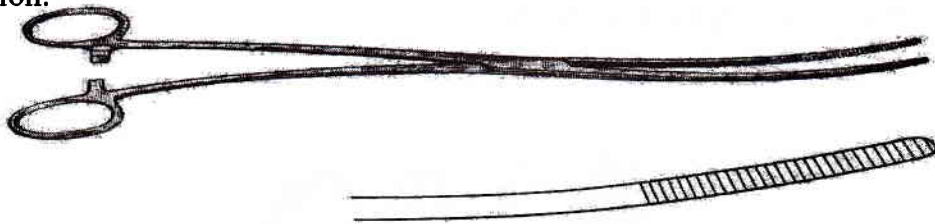
- ♥ Start from the fundus of the uterus getting downwards using an antiseptic (as chlorhexidine) with the pack.
- ♥ Use 6-7 rolls of gauze:
 - ✧ 4-5 for the uterus.
 - ✧ 2 for the vagina.
 - ✧ Each 110 cm in length & 10 cm in width.
- ♥ The other hand or the assistant's hand should be upon the fundus.
- ♥ If bleeding persists after the pack remove it.
- ♥ The pack is not left for **more than 24 hours** during which antibiotics + observations are done.
- ♥ Before removal by ½ hour give analgesics & ergometrin.

Action of the pack

- 1- Stimulation of uterine contractions.
- 2- Pressure over the bleeding points.

Dangers of the pack

- 1- Not effective as it dilates the uterus & open the sinuses.
- 2- Infection.



5- Bozeman double way catheter

Use

- ✧ It is used for uterine douches.

Method

- The nozzle is passed and guided up to the fundus.
- An antiseptic solution (e.g. chlorhexidine) is used at 37 – 38 °C + low pressure.

Action of the douches

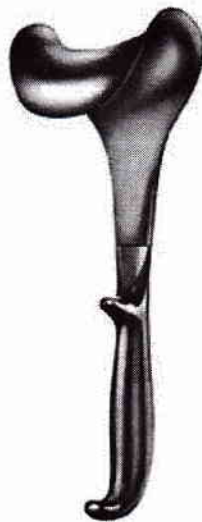
- 1- Stimulate uterine contractions.
- 2- Remove any placental remnants.

Disadvantages

- ♥ If the temperature is high it burns the uterus
- ♥ If the temperature is low, it causes congestion that increases the bleeding
- ♥ Infections
- ♥ If the pressure is high, it passes through the tube to the peritoneum → peritonitis

6- DOYEN'S ABDOMINAL RETRACTOR

- Used mainly in L.S.C.S. to retract the urinary bladder.



7- METHODS OF HEARING FETAL HEART SOUNDS

- 1- **Pinard's fetal stethoscope**: It is made of metal or plastic or wooden.
- 2- **Ultrasonic Doppler effects** (sonicade).
- 3- **Traditional adult stethoscope**: sometimes can hear the FHS.

Significance of FHS detection:

- 1- Sure sign of pregnancy.
- 2- To insure that the fetus is alive.
- 3- Help to confirm multiple pregnancy (**Arnaud sign**).
- 4- To confirm the diagnosis of **fetal presentation and position** by the determining the **site of maximum intensity** of the heart sounds.

5- Diagnosis of **fetal distress**:

- Tachycardia above 160 minute
- Bradycardia below 100 beat/minute
- Or irregular rhythms.

- ⊗ The **sonicaid** is more sensitive for fetal heart sounds detection.
- ⊗ In **high risk pregnancy**, the labor should be continuously monitored by
 - Recording the fetal heart beats in relation to uterine contraction
- &
- Fetal scalp pH measurement. If needed to diagnose fetal distress

8- METAL MUCUS CATHETER

Uses

- Used to clear the

- ◆ Mouth.
- ◆ Nasopharynx.
- ◆ Larynx.

of the fetus immediately after delivery from

- ⊗ Mucus.
- ⊗ Aspirated amniotic fluid.
- ⊗ Meconium.



9- THE OBSTETRIC FORCEPS

Definition

- ♥ It is an instrument devised for delivery of a living fetus per vagina.
- ♥ It was defined by **De Lee** as an instrument designed for the delivery of a living non mutilated fetus.

History (look text)

Types

A. Short forceps

- 1- **Short curved** (by **Wrigley**): With pelvic curve.



- 2- **Short straight** (by **Simpson**): Without pelvic curve.

B. Long forceps

1- Long curved forceps:

- a) Without axis traction piece.
- b) With axis traction rods: Milne-Murray's forceps.
- c) With axis traction piece: Neville-Simpson-Barnes.

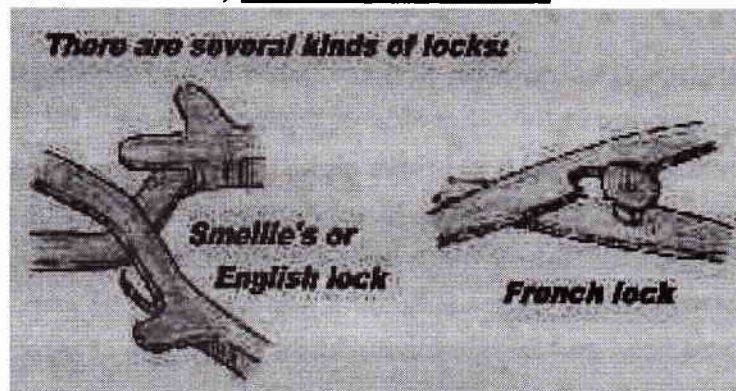
2- Long straight forceps: (Kielland's forceps).

⚙ The long curved forceps is formed of:

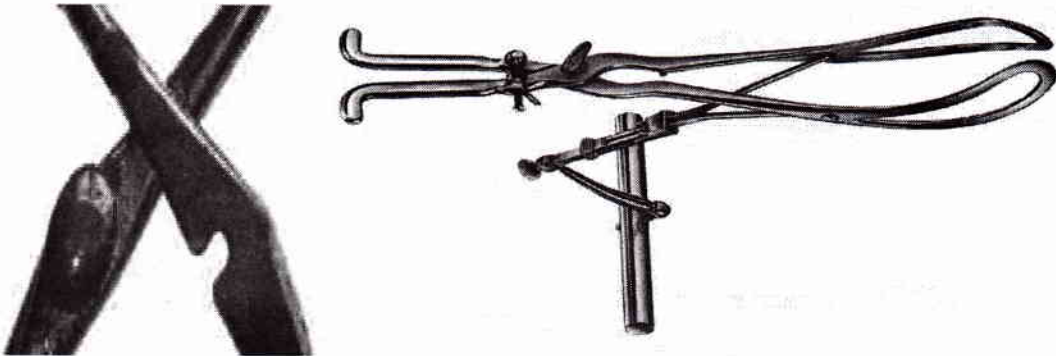
1- Handle (2.5 inches).

2- Lock.

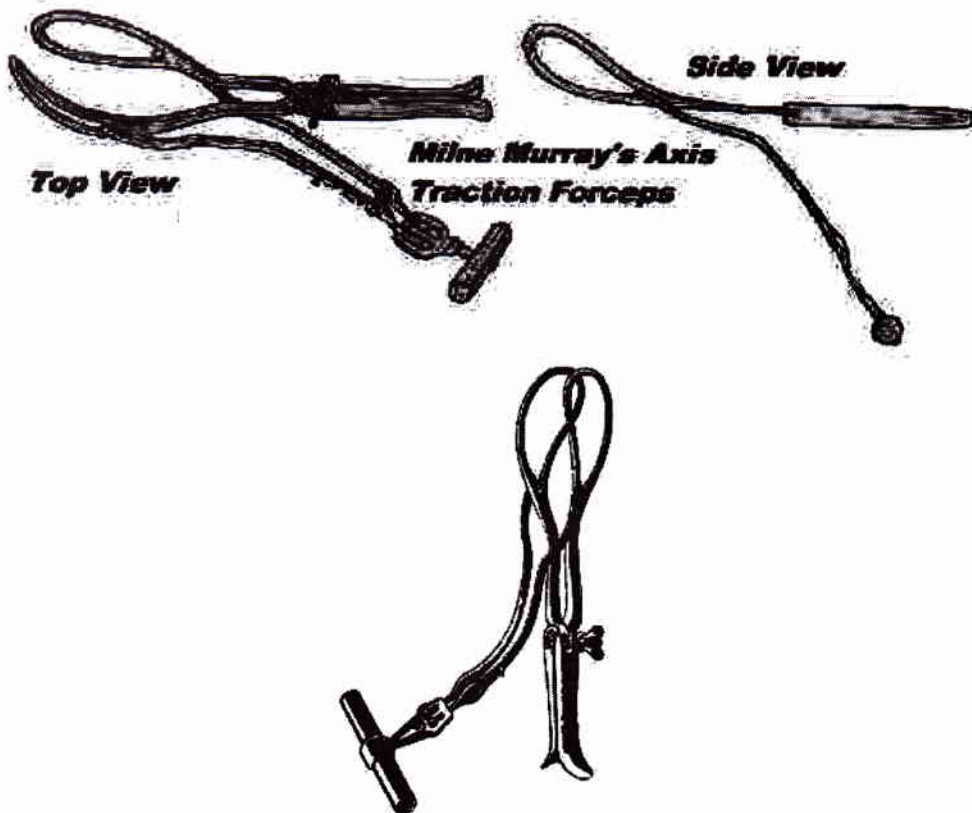
a) English (double slot).



b) French (screw).



c) Combination of the above 2 types = German .



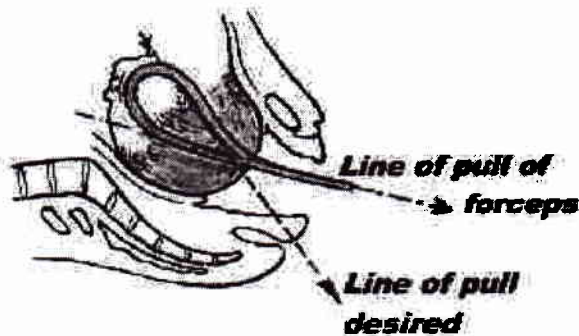
3- Shank (2.5 inches): to allow articulation outside the vagina

4- Blade (7.5 inches):

- a- **In the straight types** no right or left blade but any of them is applied to one side and the other one to the other side of the head.
- b- **In the curved types** there is left & right blades (according to the side of the maternal pelvis to which the blade is applied) to be applied correctly, the pelvic curve must be directed anteriorly & the cephalic curve medially.
- c- **The value of the pelvic curve** is to obtain a good central grip, to avoid extension of the fetal head and avoids misdirection of the line of traction.

5- Axis traction piece:

- ♥ The value of axis traction piece is to allow traction on the fetal head in the axis of the pelvis whatever its level in the pelvis.
- ♥ **It is attached to:**
 - ✧ Handle.
 - ✧ The blade proper from inside.
 - ✧ The blade proper from outside.
- ♥ Its action could be stimulated by **Pajot's** maneuver.



C. Special types of forceps

1- KIELLAND'S FORCEPS:

♥ **Blade proper:**

- ♦ It is lighter, longer & straight with slight pelvic curve the effect of which is nullified by slight bent between the blade and shank.
- ♦ It has no right or left blades but as it is used mainly in transverse arrest so one blade is anterior and the other posterior which oriented according to the position of the occiput to which the 2 metal knobs on the handles are directed at application.

♥ **Lock:**

- ♦ It has a sliding lock to allow its application to asynclitic head.

♥ **Uses:**

- ♦ It is mainly used for delivery by rotation and extraction of the head in deep transverse arrest.

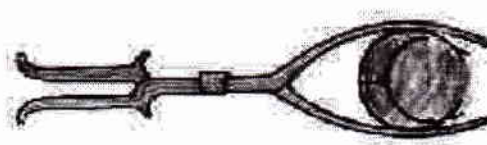
Kielland's Forceps



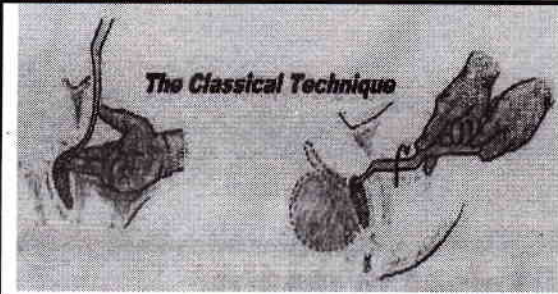
Side View



Claw Lock

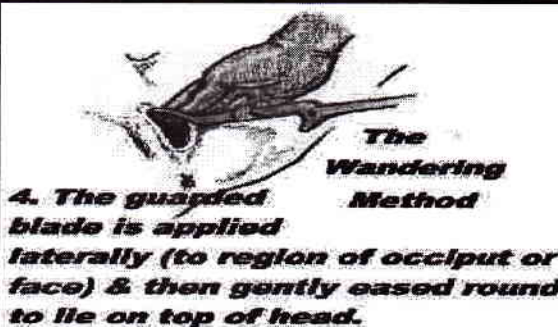


Methods of applications of Kielland forceps

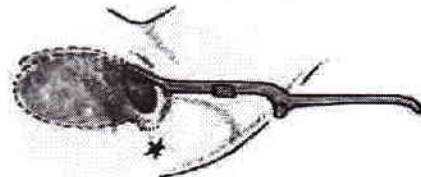


The Direct Method

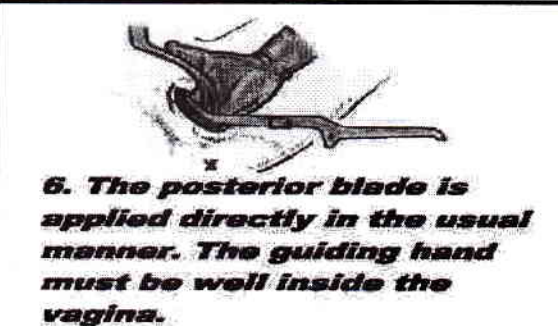
3. The anterior blade is guarded by the finger & slipped into the correct position on the side of the head. (see #5)



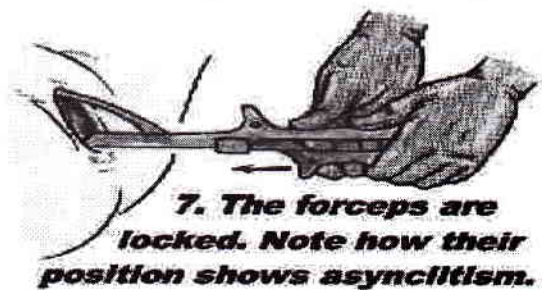
4. The guarded blade is applied laterally (to region of occiput or face) & then gently eased round to lie on top of head.



5. It now lies with the concavity of the blade applied to left (upper-most) side of the fetal head.



6. The posterior blade is applied directly in the usual manner. The guiding hand must be well inside the vagina.



7. The forceps are locked. Note how their position shows asynclitism.

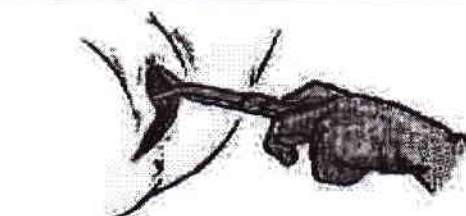


8. Asynclitism is corrected and the blades are opposite each other.

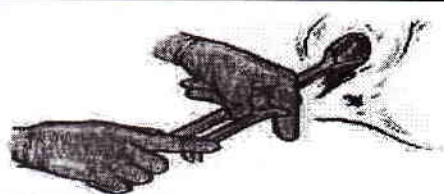


9a. The head is gently rotated to the OA position.

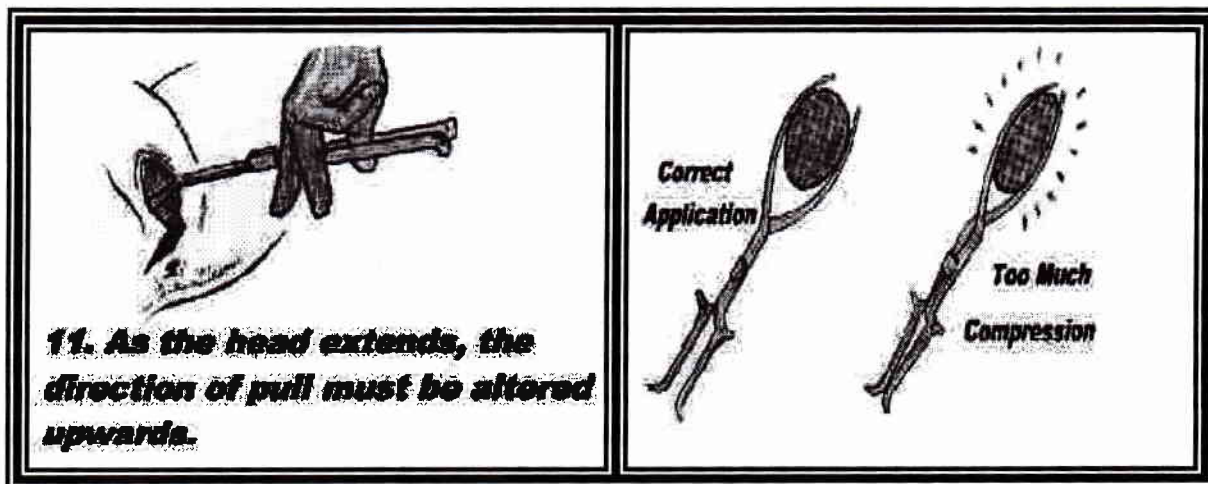
Varying asynclitism & gentle traction help to rotate into the pelvic axis.



9b. A large episiotomy is needed.

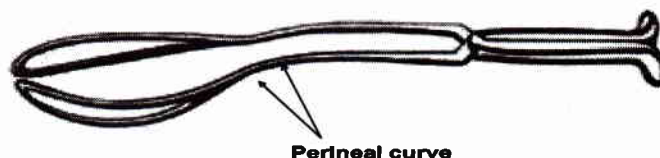


10. To prevent over compression of the baby's head, a thumb is kept between the handles.



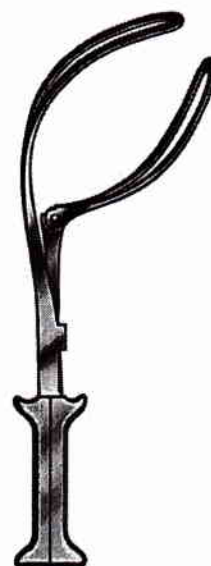
2- PIPER`S FORCEPS:

- ◆ It has a shank, with a backward curve and designed for delivery of the after coming head of breech.



3- BARTON`S FORCEPS

- ◆ It has a sliding lock with a hinge on the anterior blade for easy application.
- ◆ Uses: For deep transverse arrest



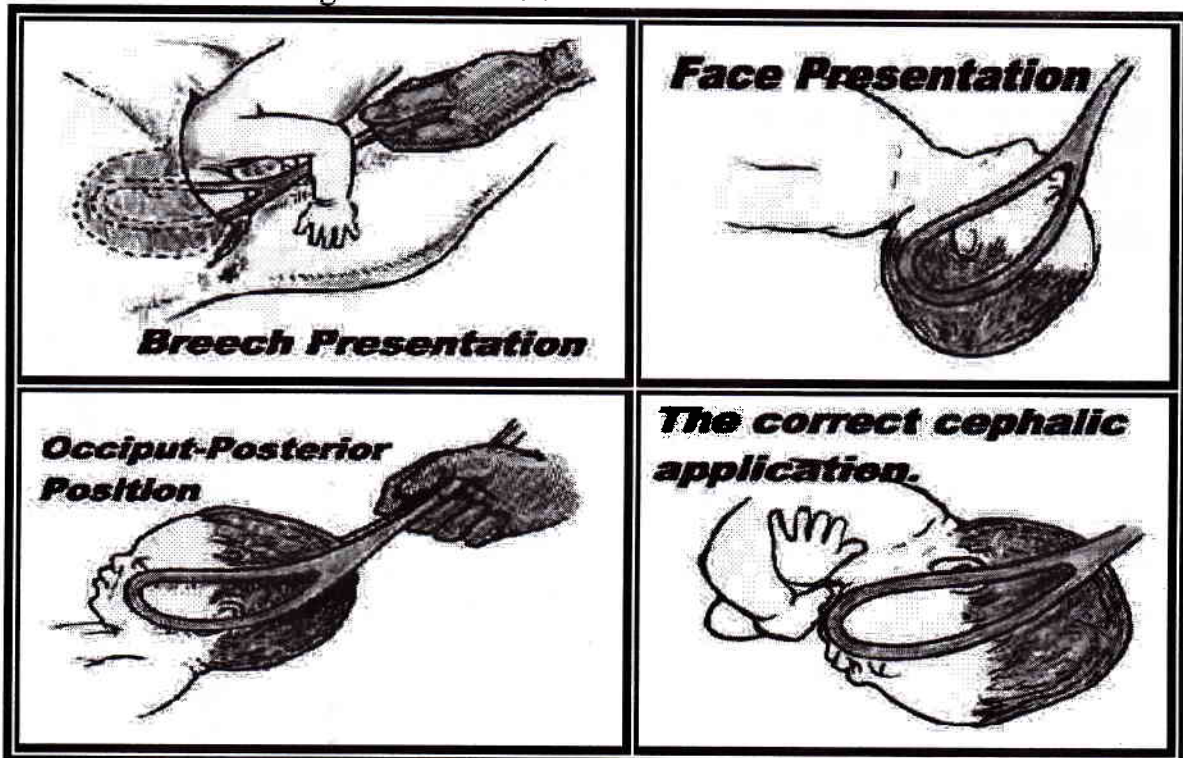
Action of the forceps

1. **Traction:** is the main action: A fair measure of force applied is traction that can be exerted by the unaided effort of one forearm.
- 2- **Compression.**
- 3- **Rotation.**

Indications of forceps

= Prolonged second stage which may be due to:

- a) Rigid perineum or pelvic floor.
- b) Uterine inertia.
- c) First degree cephalopelvic disproportion.
- d) Fetal distress or prolapsed pulsating cord in the second stage.
- e) Maternal distress or disease (heart disease-eclampsia and previous, C.S).
- f) Malpresentations:
 - Occipitoposterior.
 - Deep transverse arrest.
 - Face presentation.
 - After coming head of breech



♥ In recent obstetrics we avoid prolonged labor (for sake of the mother and the fetus)

Conditions to be fulfilled before forceps application

- 1- Complete **asepsis**.
- 2- Under **anesthesia**: General, spinal or bilateral pudendal nerve block.
- 3- Empty **bladder** and rectum.
- 4- Fully dilated **cervix**, If done before full dilatation:
 - a- Failed forceps.
 - b- Prolapse-later on.
 - c- Intra cranial hemorrhage - stillbirth or neonatal death.
 - d- Cervical tears & may extend to the LUS (incomplete rupture uterus).
- 5- The uterus is not in a state of complete inertia (traction with uterine **contractions**).
- 6- No major **disproportion**.
- 7- **Engagement** of the head.
- 8- **Favorable** presentations:
 - All **vertex** presentations.
 - **Mentoanterior**.
 - After coming head of **breech**.
- 9- The bag of **forewater** is ruptured.

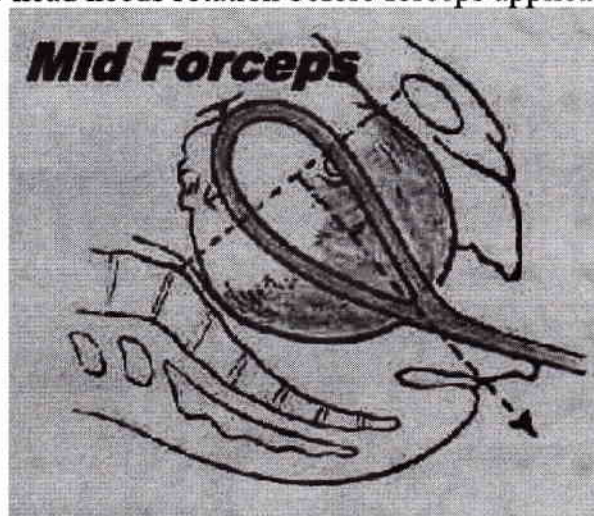
Types of forceps operations

1- High forceps operation (obsolete):

- ♥ The head is not engaged.
- ♥ C.S is safer for both for the mother and fetus.

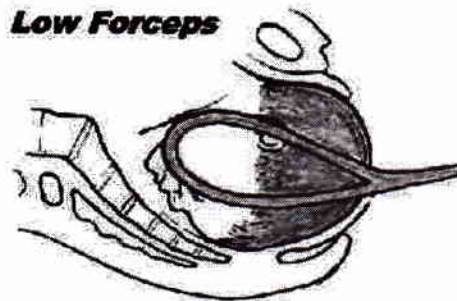
2- Mid-forceps operation:

- ♥ Engaged head & station is 0 to +1 (pajot is used).
- ♥ More difficult, as the head is higher than the low type.
- ♥ Usually the head needs rotation before forceps applications.



3- Low forceps operation:

- ♦ The head station is +2 or more and rests on the perineum.
- ♦ The sagittal suture lies in the anteroposterior diameter of the outlet i.e. (or ≤ 45 degrees rotated head).



4- Outlet forceps:

- ♥ The scalp is visible without separating the labia with the sagittal suture is in the middle line
- ♥ The complications (maternal and fetal) are minimal and the best type of forceps application is attained (cephalopelvic application).

Types of forceps application

1. Cephalopelvic application:

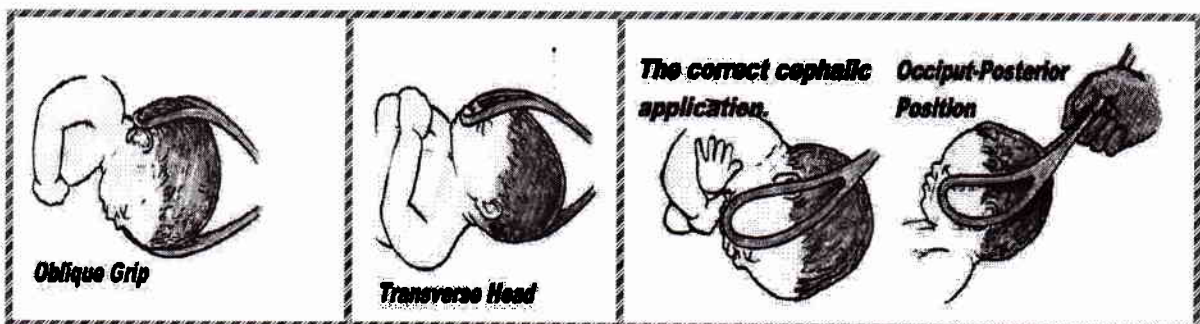
- It is the ideal application in cases of DOA, DOP & DMA.

2. Cephalic application:

- The forceps is applied on the sides of the fetal head along the mento-vertical diameter to ↓compression of the head → maternal injuries.

3. Pelvic application:

- The forceps is applied along the pelvic wall, regardless the fetal head.
- It is easier, but may lead to marked compression of the head



How to identify right & left blade in curved forceps

- 1- Pelvic curve look upwards
 - 2- Cephalic curve looks upwards
 - 3- Handle to your side
- ♥ Apply left blade 1st then the right blade over the left blade

Risks of forceps

Maternal

1- Trauma:

- a) **Cervical tears:**
 - Unilateral (more to the left).
 - Bilateral.
 - Stellate.
- b) **Vaginal tears.**
- c) **Perineal tears.**
- d) **Ruptured lower segment.**
- e) **To the bladder.**

2- Sepsis.

3- Post-partum hemorrhage (atonic or traumatic).

4- Complication of anesthesia.

5- Obstetric shock.

6- Rarely: bony injuries especially to the coccyx and lower end of sacrum.

Fetal

1- Head trauma

- Cephal-hematoma.
- Excessive compression
- intracranial hemorrhage due to:
 - Wrong application: the worse is the application to the occipito-frontal diameter of the head.
 - Applied to a premature fetus.
 - Undue force is used.
 - Applied too early in labor before fulfillments present.

3- Fractures of skull bones.

4- Nerve lesions:

- **Facial nerve compression** (Bell's palsy).
- **Brachial palsy**

5- Asphyxia due to:

- Cord compression.
- Anesthetic complication.

Failed forceps

♥ **Causes:** misdiagnosing the patient as fulfilling the criteria for forceps application as in:

- 1- Incomplete dilatation of the cervix.
- 2- Short cord.
- 3- Contraction ring.
- 4- Unsuspected hydrocephalus.
- 5- Unsuspected pelvic contraction (at the outlet as well as the brim).
- 6- Unsuspected malpresentation: as brow or Mentoposterior.
- 7- Undiagnosed occipitoposterior.
- 8- Obstructed labor with huge caput succedaneum which falsely diagnosed as engaged head while the head is high or even abdominal in its station.

DESTRUCTIVE OPERATIONS

Definition

- ♥ These are operations done to ↓ fetal size or diameters to facilitate delivery.
- ♥ Very dangerous & rarely done now (CS is safer).
- ♥ Done only on dead fetus or major CFMF.
- ♥ Contraindicated in living non malformed fetus.

Types:

Craniotomy

Indications

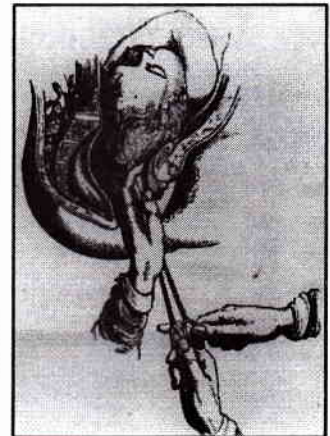
- ❖ For perforation of head to decrease its size +evacuation of its content.
- ❖ Hydrocephalus (main indication), may perforate with spinal needle → escape of CSF → decrease size of head.
- ❖ Large head.
- ❖ Retained after coming head of breech.
- ❖ Contracted pelvis.

Contraindication

- ❖ Living fetus.
- ❖ Extreme degree of contracted pelvis.
- ❖ Insufficiently dilated cervix.

Technique

- ❖ GEA, sterilization, catheterization.
- ❖ Examination under anesthesia.
- ❖ Fix the head by assistant's hand, forceps, volsellum to head.
- ❖ Use Oldham's or Simpson perforator, introduce while guarding blade with hands. {push blades to shoulders & open, repeat at right angles}.
- ❖ Introduce perforator inside the brain to destroy brain matter or wash away by Bozeman catheter.
- ❖ **Deliver the head by**
 - ⇒ Forcepsdifficult.
 - ⇒ Volsellum.
 - ⇒ Cranioclast or crush face.
 - ⇒ Combined cranioclast & cephalotribe.
 - ⇒ Exploration of the genital tract.



Complications

- ❖ Injuries (uterus, cervix, vagina, perineum, bladder, rectum).
- ❖ Hemorrhage, infection & Fistulae.

Decapacitation

Indication

- ◆ Cutting the neck to separate head from the body.
- ◆ Neglected shoulder.
- ◆ Locked twins.
- ◆ Double headed monster.

Technique

- ❖ GEA, sterilization, catheterization.
- ❖ Examination under anesthesia.
- ❖ Fix neck by pulling arm to be nearer.
- ❖ Decapacitation hook :
 - ⇒ Braun: to fracture cervical spine then cut with embryotomy scissors.
 - ⇒ Ramsbotham (sharp).
 - ⇒ Galabin (serrated).
- ❖ Delivery of the trunk by traction.
- ❖ Delivery of the head by forceps, cranioclast or jaw traction.
- ❖ Explore genital tract.

Complication:

- ❖ As craniotomy.

Cleidotomy

Indications

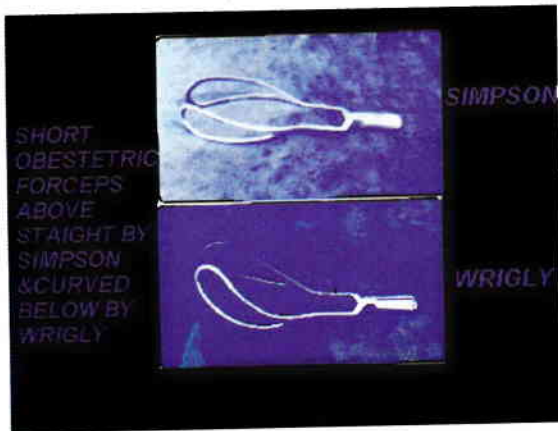
- ❖ Cutting one or both clavicles.
- ❖ Shoulder dystocia (may be done on living).
- ❖ Some cases of neglected shoulder.

Evisceration

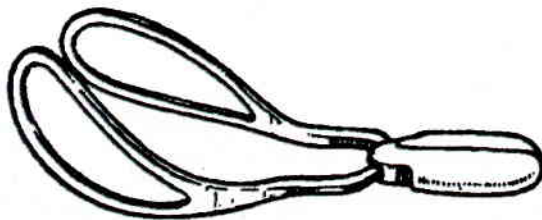
- ❖ Opening of thorax or abdomen & removal of fetal viscera.
- ❖ Indicated in obstructed labor due to.
- ❖ Thoracic swelling.
- ❖ Abdominal swelling.
- ❖ Some cases of shoulder dystocia.

Spondylotomy

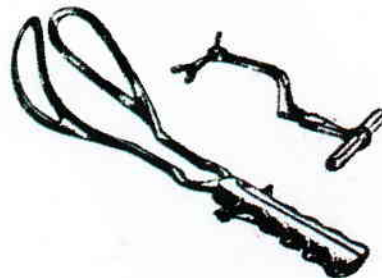
- ❖ Division of fetal spine (in some cases of neglected shoulder when neck is not in reach).



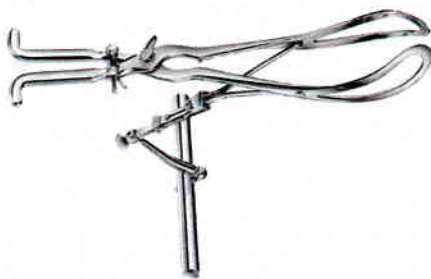
Simpson forceps



Wrigley forceps



Long Simpson forceps



Tarnier forceps



Milne Murray's Axis Traction Forceps



Kielland forceps

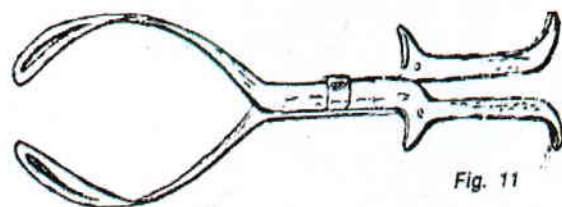
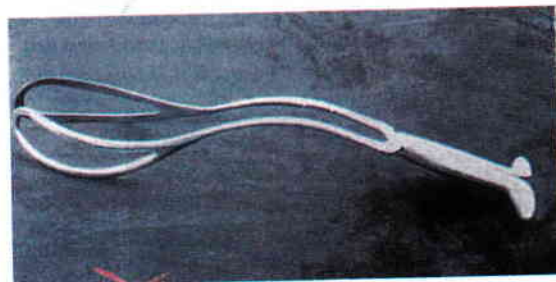


Fig. 11

Kielland forceps

b. Piper's forceps:

- × It has a perineal curve on the shank to allow the application and traction on the after-coming head in a breech delivery



Piper's forceps



Barton's forceps



Malmstrom cups



Doyen abdominal retractor



Ring forceps



Metal mucus catheter



Metal mucus catheter



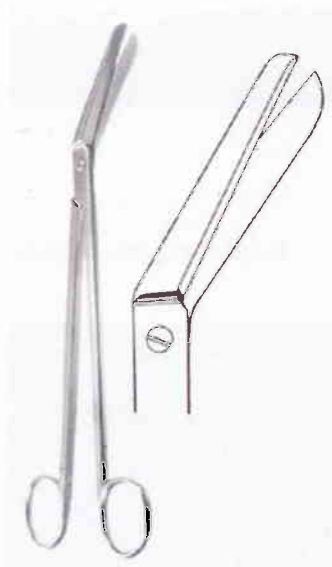
Metal mucus catheter



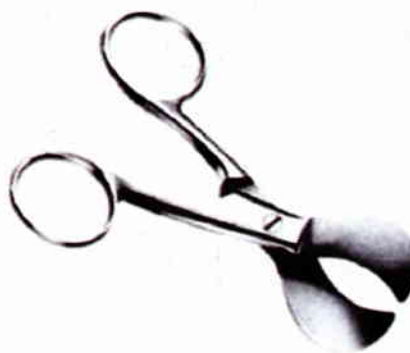
Bozeman packing forceps



Female metal catheter versus Bozeman double way catheter



Episiotomy Scissor



Umbilical Cord Scissor



Neleton catheter



Aneurysmal needle



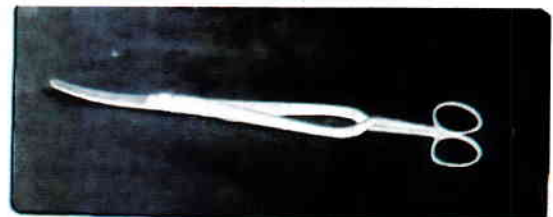
Sonicaid



Pinard fetal stethoscope



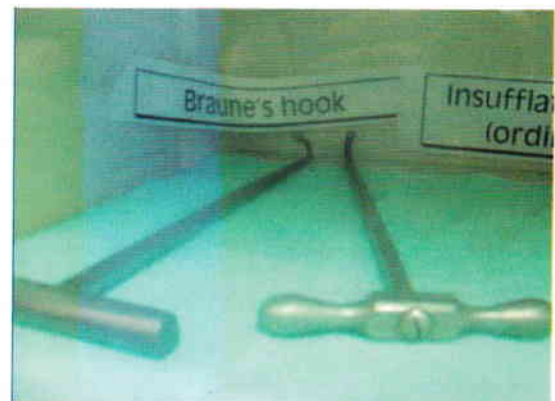
Hook & crochet



Embryotomy scissor



Galabin decapitation hook



Braune's hook



Winter's cranioclast & cephalotribe



Winter's cranioclast & cephalotribe

Gynecological instruments

1-THE UTERINE SOUND مهم جدا خلى بالك

- It is made of a malleable **طري metal**
- It is 3-4 mm in diameter to allow application without anesthesia
- It is slightly curved near the tip (2.5 cm from the tip) to adapt to the **angle of uterine flexion**
(so the angle of the sound = the angle between the cervix & uterus)
- Its handle is **corrugated** مشرشر on one side, which is directed towards the bend at the end → It helps to know the direction of the tip by inspecting the corrugations on the handle
لو الشرشره لفوق يبقي (AVF) ولو لتحت يبقي (RVF).
- The end is blunt to avoid perforation (**about 4 mm in diameter**)
- Marks **مرقم** in **cm or inches** are present on its straight part.

How to use it?

- ☛ **Bimanual examination** is done to palpate the uterus دي اول حاجه
- ☛ Exposure of the cervix by speculum & the anterior lip is grasped by a volsellum
- ☛ The sound with its handle loosely held between the thumb and index fingers is gently introduced in the cervix تمسكه بقرف.
- ☛ The **1st resistance** felt is at the **internal os** and the **2nd resistance** is at the **fundus** of the uterus سوال مهم .

Indications:

1. Measure the cervical length and that of the whole uterus.
$$\text{Uterine index} = \frac{\text{Total length of the uterus} - \text{length of the cervix}}{\text{Length of the cervix} \times 2}$$
2. Determine the direction of the uterus if AVF or RVF.
3. Diagnosis of septate uterus or intrauterine foreign body, IUCD by X-ray in lateral position.
4. Diagnosis of vesicovaginal fistula: a click is heard against a metal catheter.
5. To test friability in cancer cervix: the sound is used here as a probe.
6. Differentiation between corporeal and cervical polypi.
7. Differentiation between fibroid polyp and chronic inversion of the uterus.
8. Clark's sign: brisk bleeding on introduction in cancer endometrium.

Complications

- 1- **Perforation** of the uterus (most important complication).
- 2- Introduction of **infection**.
- 3- Disturbance of **pregnancy** if already existing.



2- VAGINAL SPECULAE

They are used to visualize:

- 1- The portiovaginalis of the cervix for length, direction, erosions, polypi & tumors.
- 2- The vaginal wall for any pathology

(1) **Sims' speculum**

1. **Single ended** (*some call it vaginal retractor* Sims' وليس)

2. **Double ended**

- It has 2 blades of different sizes connected together by a bar.
- **It has two ends to fit different sizes of the vagina**
 - ♥ Small end for small vagina
 - ♥ Large end for large vagina
- **It has a groove**
 - For drainage of any discharge or blood
 - Also inflation of the vagina (allowing air entry)

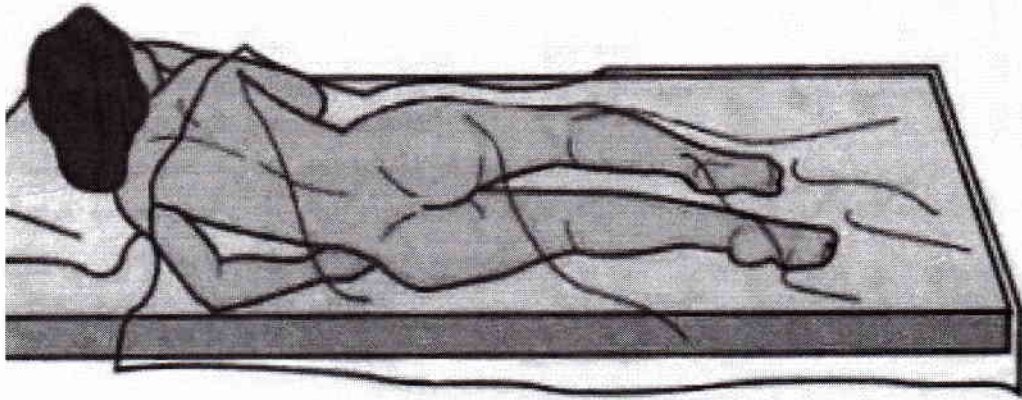
Uses

- It is used to expose the anterior vaginal wall in cases of vesico-vaginal fistula,
- Also used during operative repair of the fistula.
- Also used in vaginal operations instead of Auvard's self retaining speculum.



Method of use

- the patient lies in the Sims' position
- A pillow is put under the waist of the patient for upward displacement of intestine which causes -ve intra-abdominal pressure that leads to vaginal inflation & better exposure
- The clinician stands behind that patient with a good source of light.



- The doctor raises the right labium & right buttocks by the left hand & introduces the speculum by the right hand then rotates it & applies traction on the posterior vaginal wall.

(2) Cusco's bivalve speculum:

▪ Types:

❖ **Fenestrated** Cusco's vaginal speculum

➤ To visualize anterior & posterior vaginal walls.

❖ **Not fenestrated** Cusco's vaginal speculum.

▪ Method of use:

- No need for anesthesia
- Lubricated speculum is caught closed between the right index & middle fingers parallel to the vulva (vertical as vulval introitus) but slightly oblique so that it doesn't touch the urethral orifice as this causes pain which may excite reflex contraction of the pelvic floor muscles & this causes a difficulty in insertion
- Separate the labia by fingers of the left hand
- Introduce the speculum closed (diameter of lower part of the vagina 3.5 cm)
- Gradually rotate it till becomes transverse at the vaginal vault (diameter 7.5 cm) → Open the speculum
- For its removal, this is done by fingers of the right hand that gradually withdraw, close & rotate so that it comes out of the vagina closed & vertical.
- It is removed semi closed to avoid injury of the vagina

N.B.: avoid lubricants (dry speculum) in case of obtaining vaginal smears (cytology) or in post coital tests.

▪ **Indications:**

- a- During HSG, cauterization, insertion of I.U.C.D. or local treatment for the cervix (without anesthesia (مهمه هذه النقطه)).
- b- During routine gynecologic examination to expose the cervix and vagina while the patient in the lithotomy position.

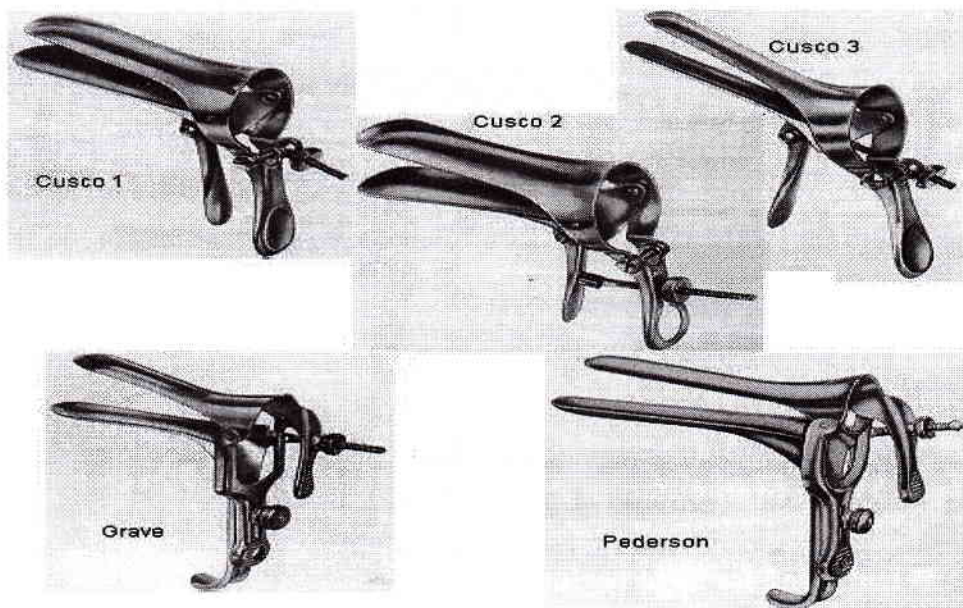
▪ **Disadvantages:**

♥ No visualization of anterior & posterior vaginal walls, to solve this:

a) Use fenestrated one

Or

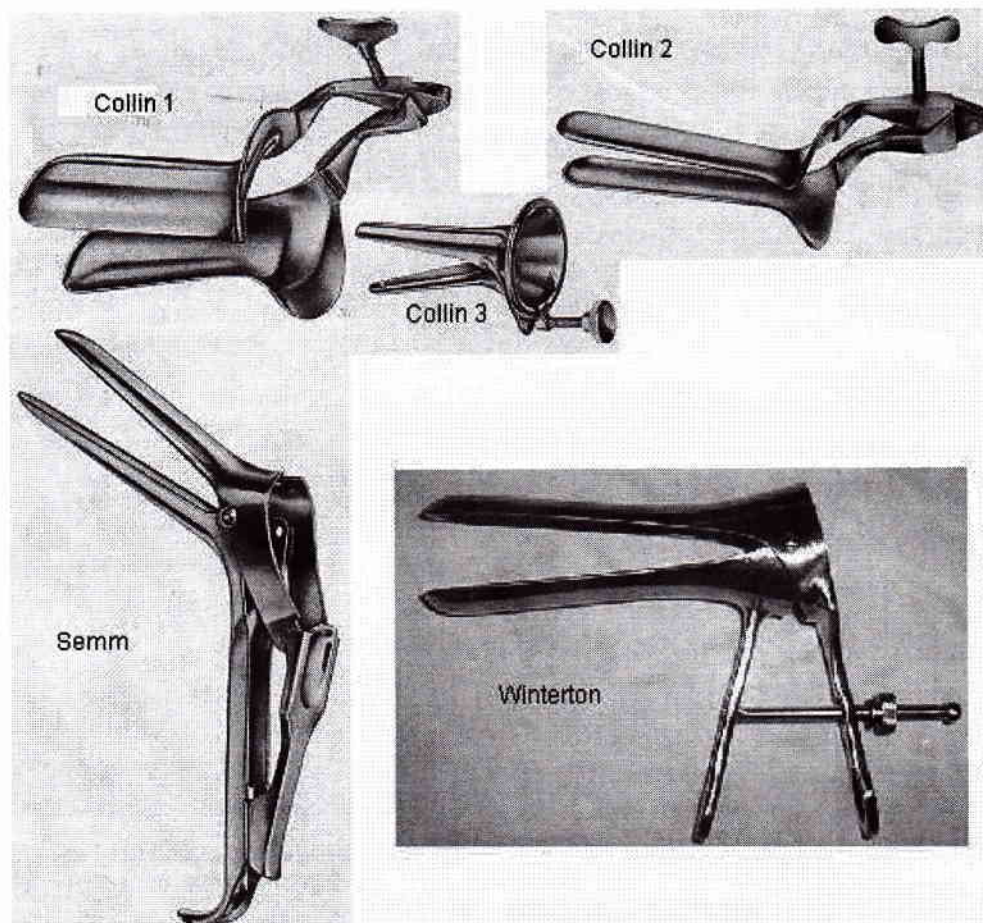
b) Other specula as Sims`



(3) **Graves`s speculum:**

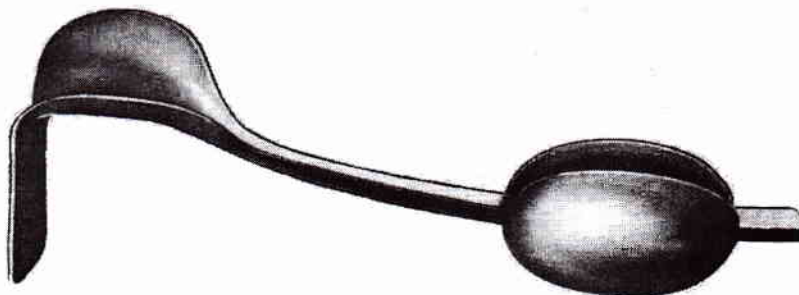
- As Cusco`s speculum but **with the addition of a segment** that helps to widely separate the 2 blades all-through its length → better exposure.
- The posterior plate is longer than the anterior plate as the posterior vaginal wall is longer than anterior (**more anatomical**).
- Nowadays, it is used more frequently than Cusco`s speculum.
- It has a **groove** to displace the volsellum to clear the field & visualize the cervix while examination.

(4) Collin's speculum:



(5) Auvard's self-retaining vaginal speculum:

- ♥ It has a grooved handle for drainage of the blood during the vaginal operations
- ♥ There is a heavy metal ball (either detachable or fixed) to be self retaining.
- ♥ There are 2 holes on each side for fixation by towel clips to prevent falling.
- ♥ Uses:
 - It is applied on the posterior vaginal wall of the patient under anesthesia in the lithotomy position in most of the vaginal operations (all except those on the posterior vaginal wall as posterior colpoperineorrhaphy).
 - It is also used for **exploration** of the cervix after instrumental delivery for any cervical tears.



(6) Ferguson's speculum:

- It is cylindrical with beveled end to allow the longer side to fit into the deeper posterior fornix (10 cm > anterior wall 8cm).
- It was used during the chemical cauterization of the cervix e.g. by silver nitrate (AgNO_3) 10%, it protects the vaginal wall
- Electro cauterization of the cervix is now used to cauterize in radial manner and to puncture Nabothian follicles.

The complications of cauterization are:

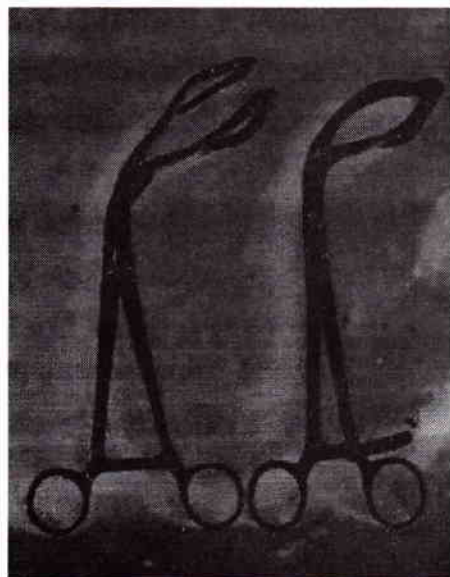
- 1- Infection
- 2- Secondary hemorrhage
- 3- Cervical stenosis
- 4- Dysmenorrhea
- 5- Infertility
- 6- Cervical dystocia, during labor

Cryocautery: (by freezing the tissue) is a new method for treatment of CIN



3- UTERINE HOLDING FORCEPS

- It is used to hold the uterus during abdominal gynecological operations.



4- VOLSELLUM FORCEPS

•Types:

a- **Single toothed** volsellum forceps. ابو سنه واحده

➤ Better in case of extensive fibrosis (no bleeding tendency).

b- **Multiple toothed** volsellum forceps:

♣ (...X...) = number of teeth as 4 X 3.

♣ **It is better as:**

- It grasps the cervix in more than one point. So decreased the incidence of cervical tears.
- if multi-toothed volsellum is unavailable use two single toothed to avoid single point pressure)

• It has an anterior upward curve to avoid injury of the urethra.

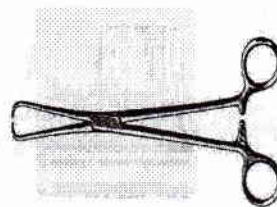
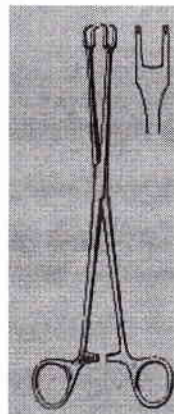
• **Uses:** It is for grasping the cervix during vaginal operations, insufflation, HSG and/or insertion of I.U.C.D.

Single toothed volsellum	Multi-toothed volsellum
-Needs no traction	-Needs traction
-Without general anesthesia	-Usually under general anesthesia

•Disadvantages:

➤ Cervical tears (especially in single toothed) → compress it to stop bleeding or cauterization or suturing.

- **N.B:** During vaginal circlage although there is pregnancy but better grasp the cervix by multiple toothed volsellum instead of ring forceps to avoid its slipping and trauma to the cervix from the repeated applications .



5- INTRAUTERINE CONTRACEPTIVE DEVICES (IUCD)

- These are devices introduced inside the uterine cavity for contraception.
- The most commonly used are the poly ethylene types
- They are impregnated into barium to be radio-opaque as Lippes loop, safe T-coil.
- There are other materials used for manufacturing the devices as:
 - ♥ **Stainless-steel,**
 - ♥ **Nylon**
 - ♥ **Wire.**
- There is a special applicator for the device.

Recently medicated loops are used as:

(1) Copper Medicated Loops:

- The copper is either in the form of
 - ♥ Wire or
 - ♥ Multiple sleeves.
- The figure following the name of the device means the surface area of the copper in the loop in mm².
- Types:
 - 1- **Copper T loops:** (*the most commonly used nowadays is Cu T 380A*).
 - 2- **Copper 7:** Gravigard.
 - 3- **Lippes loops with copper.**
 - Lippes A – 200
 - Lippes A - 135

(2) Progesterone medicated T loop : غالى جدا

- ♥ Progestasert, Mirena

Contraindications:

- 1) Unexplained uterine bleeding.
- 2) Pregnancy or suspicious of pregnancy.
- 3) Septic abortion or post partum endometritis in the last 3 months.
- 4) Pelvic inflammatory disease (PID).
- 5) Disturbed configuration of the endometrial cavity by myoma or congenital anomaly in the uterus.
- 6) Suspicion or presence of genital malignancy.

Complications:

1. **Bleeding (the commonest). It is due to:**
 - ♥ Increased vascularity and congestion of the endometrium.
 - ♥ Local abnormality of the blood clotting mechanism.
 - ♥ Mechanical damage & ulceration of the endometrium.
2. **Pain:** Cramps due to ↑ uterine contractility in a trial to expel the loop.
These 2 side effects may necessitate removal of the device if uncontrolled.
3. **Pelvic inflammatory disease (PID).**
4. **Expulsion:** Partial or complete.
5. **Pregnancy:** intrauterine or ectopic pregnancy
6. **Perforation of the uterus.**
7. **Embedding يدفن in the endometrium which results in:**
 - ❖ Difficult removal.
 - ❖ Reduction in the contraceptive efficacy وممكن تحمل.

Patient Instructions following application

1. In the first few months spotting or heavier menstruation may occur.
2. **Treating the cramps:**
 - ♥ By mild analgesics
 - ♥ Reassurance: they will become milder during the following periods.
3. **She must report immediately if:**
 - ♥ There is rise in temperature.
 - ♥ There is any purulent vaginal discharge.
 - ♥ The device is expelled partially or completely
 - ♥ The threads are not felt protruding in the vagina.
4. **The position of the device should be checked:**
 - ♥ **FIRST** after the two periods
 - ♥ **THEN** every 6-12 months later on.

Pregnancy while IUCD in situ:

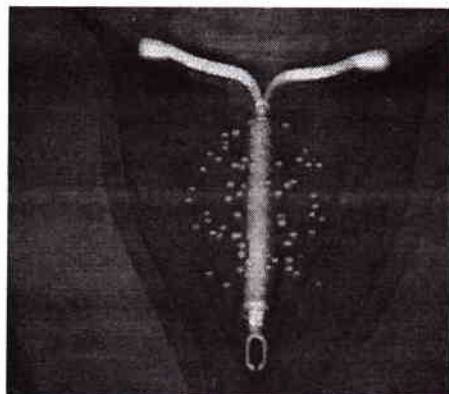
A. Intrauterine

- **If accessible remove** → risk of abortion (spontaneous or septic) is 25%.
- **If inaccessible leave** → risk of abortion (spontaneous or septic) is 50%.
- The device doesn't cause congenital abnormalities of the fetus.

B. Extrauterine

- It is more than normal population. رأي بعض الناس .
- Manage as ectopic pregnancy & avoid it as a contraception later on.

- 👉 The fertility returns shortly after removal unless PID caused by IUD.
- 👉 No evidence that IUCD causes an ↑ in cervical or endometrial cancers



Perforation of the uterus

A. Fundal perforation:

- **Predisposing factors:**
 - ❖ Soft uterus
 - ❖ Friable as in puerperal uterus
 - ❖ If the push-out technique is used rather the withdrawal technique.
- **Diagnosis:** It is suspected when no threads are felt or seen in the cervical os
- **The diagnosis is confirmed by:**
 - 1- Sounding the uterine cavity to feel if it is present or not.
 - 2- Placing a metal sound in the uterine cavity and X-rays are made.
 - 3- Outlining the uterine cavity by radio opaque liquid.
 - 4- X-ray: it appears beyond the limits of the filled of the uterus.
- **Surgical removal if:**
 - 1- If medicated to avoid tissue reaction in the peritoneum.
 - 2- If closed type to avoid bowel strangulation.
 - 3- If multifilament type (as Dalkon Shield) as they cause sepsis.
- **Methods of removal:** Laparotomy, Posterior colpotomy or Laparoscopy.

If the device is inert, open and no anxiety from the patient side, it can be left.

B. Cervical perforation:

- ♥ The lower tip of the loop gradually perforates the cervical canal.
- ♥ Some devices has an enlarged tip to
 - ↓ This complication
 - Also to prevent downward displacement.
- ♥ **The treatment of cervical perforation:**
 - Removal of the device after dislodging its tip by pressing upwards on it.

6- THE CERVICAL DILATORS

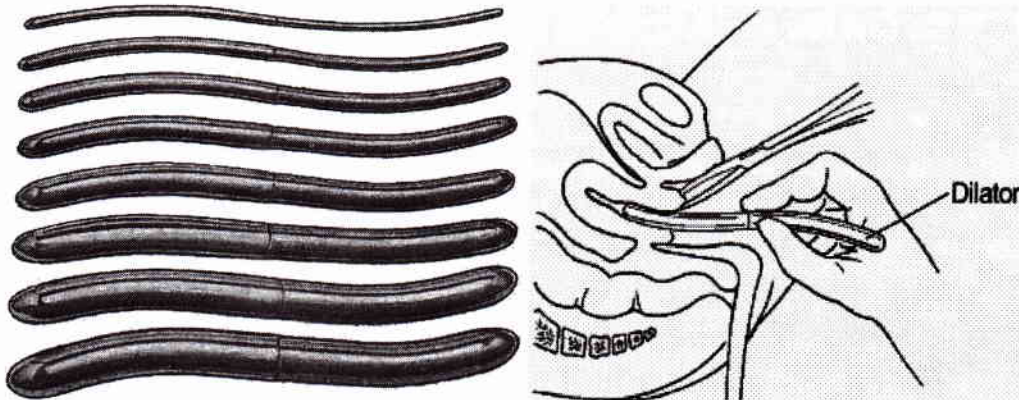
Hegar's dilators

• Types:

a- Single ended.

b- Double ended.

- ♥ The diameter in **millimeters** is written on the handle.
- ♥ There are two successive sizes are represented in each of the double ended dilators e.g. 5, 6 and 9, 10 etc.
- ♥ It has a **uniform** thickness.
- ♥ The tip if the single ended dilators is curved in the direction of the flattened surface of the handle.



Fenton's dilator

- ♥ These dilators have a **narrow tip** than base
- ♥ So a greater degree of dilatation is obtained as the same dilator is further introduced in the cervical canal
- ♥ On the base of the dilator, there is a figure رقم
- ♥ The written figures 11/14 means that the narrowest diameter is 11 mm & the widest is 14 mm

Hegar is better as it has a uniform diameter & a blunt tip

→ less liability to perforate the uterus

Indications of cervical dilatation

A. Therapeutic:

1- *Treatment of spasmodic dysmenorrhea by dilatation only:*

- 25 % permanent cure.
- 29 % no improvement.
- 50 % variable periods of improvement.

2- *Drainage of pyometra or hematometra by dilatation only.*

3- *Infertility due to cervical factor* كلام فارغ

B. Preliminary step to:

1. *Operations on the uterus:*

- I. Preliminary to introduction of radium in the uterine cavity.
- II. Curettage (diagnostic or therapeutic).

2. *Operations on the tube:*

- ♥ Prior to insufflation or hysterosalpingography in patients who have stenosed cervix.

3. *Operations on the cervix:*

- ♥ Fothergill's operation, Trachelorrhaphy or cauterization.

Retrograde dilatation of the cervical canal is done through the opened uterine cavity at laparotomy for myomectomy operation or elective C.S. وانا بعمل العمليه بنزل صباغي من تجويف الرحم واوسع العنق من فوق

Technique of cervical dilatation

- General anesthesia.
- Lithotomy position.
- Sterilization of the vulva, vagina and skin.
- Application of sterile towels (Draping).
- Catheterization to evacuate the bladder.
- Bimanual examination for the size, direction & masses of the uterus & adnexa.
- Posterior vaginal wall speculum is applied & the anterior lip of the cervix is pulled by a volsellum
- Sounding of uterus to detect size and direction of the uterus.
- **Dilatation of the cervix:**
 - Usually starting by dilator number 3 or 4 (= 4 mm in diameter).
 - Smaller diameter causes a false passage so better to be avoided.**

- The dilator is held **like a pencil** and pushed gently through the cervical canal to avoid perforation during dilatation. The finger is put at a distance equal the length of the cervical canal after sounding.
- **1st resistance** is at the internal os & then it is pushed through the cervix.
- The dilator should be **left for 2 minute** to allow the circular fibers to relax & avoid rapid dilatation with subsequent patulous cervix.
- It is then removed & the next larger size is introduced until the required dilatation:
 - ♥ **Number 8-10** for endometrial curettage.
 - ♥ **Number 12** before amputation of the cervix.
 - ♥ **Number 14** for treatment of spasmodic dysmenorrhea.

Complications

Perforation of the uterus

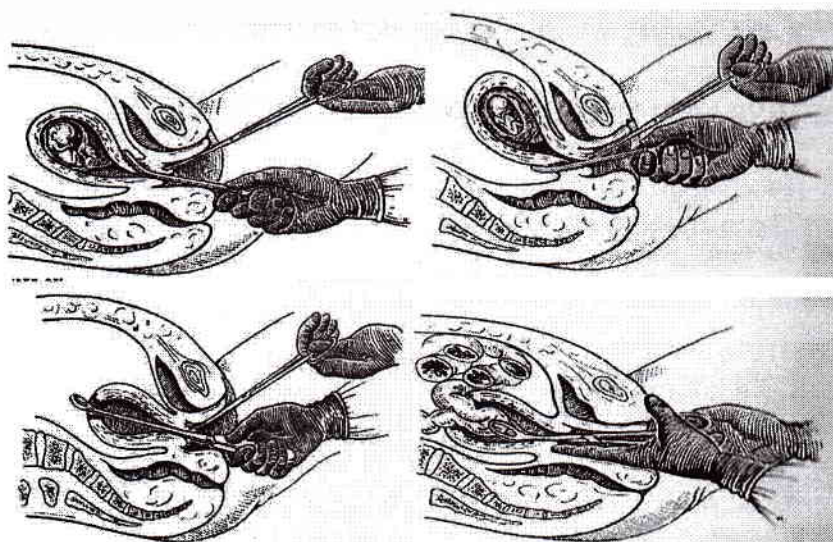
- **Instruments with high possibility of perforation:**
 - ♥ Sound.
 - ♥ Dilators
 - ♥ Curettes
 - ♥ Ovum forceps
 - ♥ Hysteroscopy
- **Predisposing factors:**
 - ♥ Lack of surgical experience
 - ♥ Soft, friable uterus e.g. pregnancy, infections, malignancy
 - ♥ Acute AVF, RVF.
- **Common site of perforation:**
 - ♥ Fundus of the uterus
 - ♥ Posterior isthmus (in case of AVF uterus)
 - ♥ Anterior isthmus (in case of RVF uterus)
 - ♥ The cervix may be rarely perforated.
- **The management**
 - ♥ Laparoscopy is done to see the size of perforation
 - ♥ If the perforation occurs in clean operation e.g dysfunctional bleeding: stop the operation and close observation of the patient.
 - ♥ If occurred in infected cases, it is mandatory to give antibiotics.

Small perforation:

- ♥ Continue the procedure under laparoscopic guide
- ♥ Observation for 24 hours (every ½ hour during 1st 6 hours then every 4 hours for 24 hours) → deterioration, internal hemorrhage, peritonitis or suspected bowel injury = immediate laparotomy
- ♥ As a rule nothing happens except risk of rupture uterus in next pregnancy.
- ♥ The patient is given a report about the operation (should be delivered by CS in next pregnancies).

Extensive perforation with bleeding

- ♥ Immediate laparotomy (also in case of endometrial carcinoma, the best treatment is laparotomy & pan hysterectomy)
- ♥ **If the patient is young:** repair the perforation but if it is difficult, hysterectomy is recommended
- ♥ **If the patient is old:** hysterectomy is done



Others

1. **Ascending infection** as endometritis, salpingitis, parametritis and peritonitis.
2. **Cervical incompetence** that leads to repeated abortions.
3. **Cervical laceration:** tears or splitting of the cervix rarely extending to involve the uterine vessels with sever hemorrhage or hematoma formation.

7- UTERINE CURETTES

• Types:

(1) Loop curette:

- Sharp curette.
- Double curette (sharp and blunt).
 - 1- The blunt curette is used in soft (as pregnant) or friable (infected or malignancy) uterus
 - 2- Large one is better than small one as it has less incidence of perforation.

(2) Fundal curette:

- It has 2 ends of different size.
- It is designed to curette the fundus of the uterus in fractional curettage to diagnose endometrial carcinoma.

(3) Blunt flushing curette (Rheinstadter's curette).

- It allows washing out the uterine contents.
- It was used to curette the uterus in case of abortion.

(4) Biopsy curettes as Sharman's and Novak's.

- It doesn't need cervical dilatation & so it is used without anesthesia.
 - 1- It only removes a strip of the endometrium & so early malignancy may be missed.
 - 2- The main indication is diagnosis of infertility

(5) Suction curette.

Indications of curettage

1- Diagnostic:

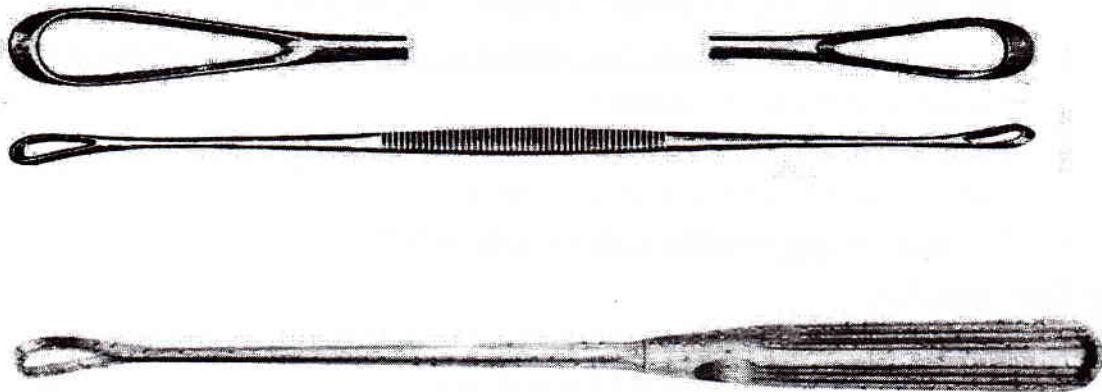
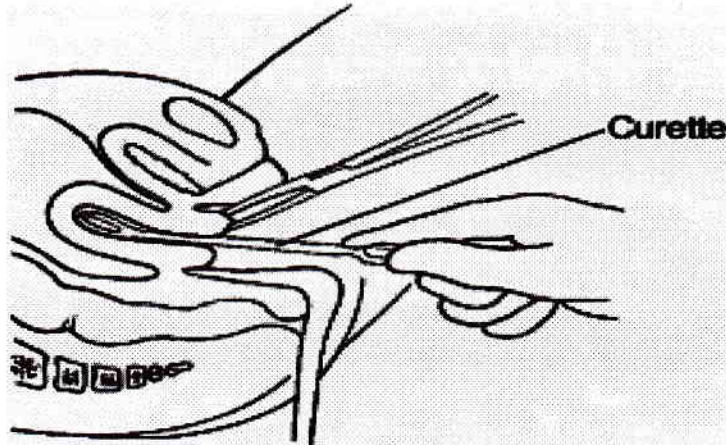
- In case of irregular or excessive uterine hemorrhage to establish the histopathological pattern of the endometrium, endometrial carcinoma, polypi, fibroid polypi or retained products of conception.
- For excluding the intrauterine pathology in prolapse operations in which the uterus is not to be removed.
- To establish the occurrence of ovulation in infertile patient and if it occurred, secretory changes could be seen.
- To diagnose non specific endometritis as T.B.

2- Therapeutic:

- Sometimes it is effective in certain types of dysfunctional bleeding.
- To remove retained products of conception.
- Evacuate the uterus in cases of abortion (inevitable, Incomplete & missed).
- To remove endometrial polypi or small myomatous polypi.
- Other indications: to scrap phosphatic encrustations in case of fistula.

Complications

- Sepsis, Hemorrhage
- Perforation of the uterus
- Permanent amenorrhea and infertility due to adhesions from over curettage (removing the basal layer = Asherman syndrome).



8- INSUFFLATION CANNULA

Types

- 1- The ordinary type
- 2- The cone shaped screw cannula (Leech Wilkinson).

They are used for insufflation or hysterosalpingography.
Some cannulae are kept in place on the cervix by suction.

Signs of tubal patency if insufflation (Co₂ gases) used

1. Changing in pressures in manometer or kymography.
2. Hearing of bubbling sounds over the lower abdomen during the test.
3. The patient may feel referred pain at either shoulder-usually the right-when she sits up after the test due to irritation of the diaphragm.
4. Radiography shows a crescentic gas shadow under diaphragm.

Contraindications

- 1- Pregnancy.
- 2- Recent salpingitis.
- 3- Infection in the lower genital tract and presence of purulent discharge.
- 4- During and immediately before or after the menstruation.
- 5- Tuberculosis of genital tract.

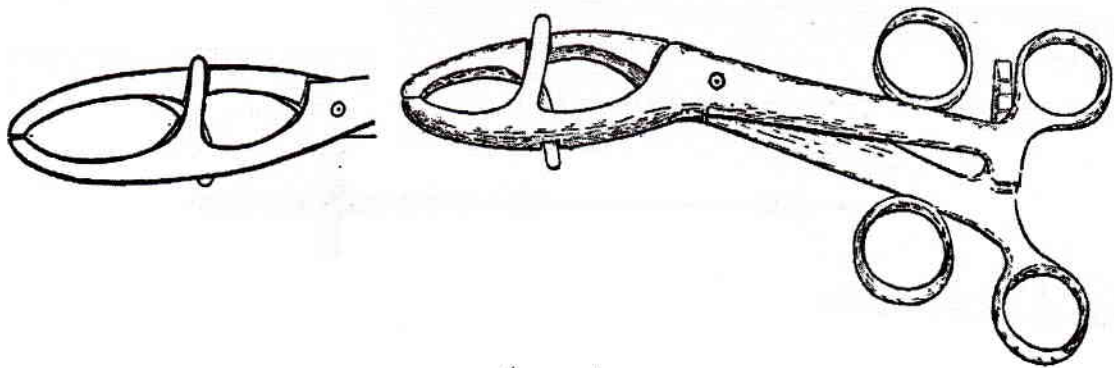
the tip is applied against the cervical canal



9- BONNEYS MYOMECTOMY CLAMP

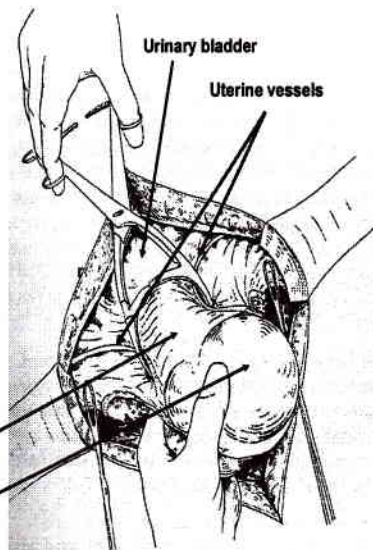
- ❖ It is for compression of the uterine vessels just above the internal os (isthmus), to ensure hemostasis during myomectomy
- ❖ For complete Hemostasis, intestinal clamps are put on the overiopelvic (infundibulo-pelvic) ligaments to avoid bleeding from ovarian vessels.
- ❖ The action of myomectomy clamp could be achieved by
 - Encircling the cervix with a tightened rubber tube passed through 2 holes in bloodless area in base of the broad ligament.
 - Or pressure by the assistant hands (if only 1 or 2 myoma are present).
- ❖ The clamp should include both round ligaments on its grip.

- It is safe to left the clamp for one hour without uterine infarction.
- May cause trauma to the uterine vessels.



Applying the myomectomy clamp to include both round ligaments with the upper end of the vagina and the uterine vessels.

Body of the uterus
The fibroid



10- MYOMECTOMY SCREW

- It is used to hold the myomatous uterus during

- ♥ Myomectomy and
- ♥ Hysterectomy.



11-FEMALE URINARY CATHETERS

Types

- 1- Female metal catheter.
- 2- Rubber catheter or plastic catheter (Neleton's catheter).
- 3- Special types e.g. (Foley's self retaining catheter).

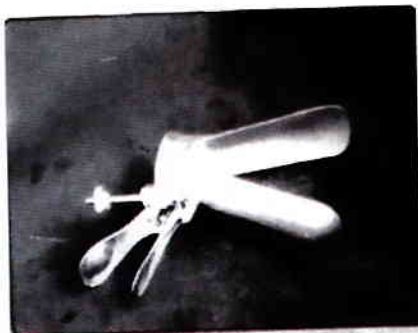
Indications

1. Bladder evacuation before gyn/obs operation or examination.
2. Collection of urine samples for laboratory examination and cultures.
3. Diagnosis of vesico-vaginal fistula:
 - a) Metal catheter click against a metal probe or sound introduced from the fistulous opening.
 - b) By methylene blue test injected through the catheter in the bladder.
4. Postoperative/postpartum bladder evacuation in perineal operations.
5. Cases of retention of urine as occur in: During labor, retroverted gravid uterus, pelvic hematocele, & hematocolpos.
6. Pelvic tumors (fibroids, ovarian or broad ligament tumors).
7. Diagnosis of bladder conditions as injuries or stones.
8. Diagnosis of urethral diverticulum.





Cusco's spe ulum (closed)



Cusco's speculum (open)



Graves' speculum (closed)



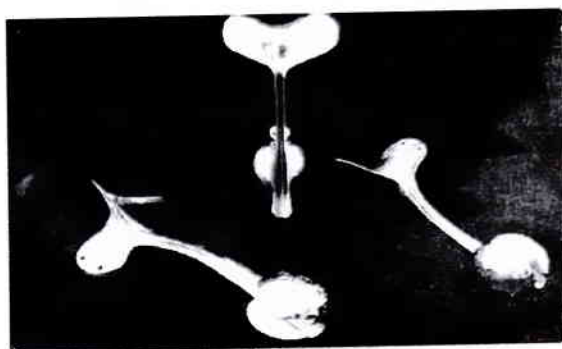
Graves' speculum (open)



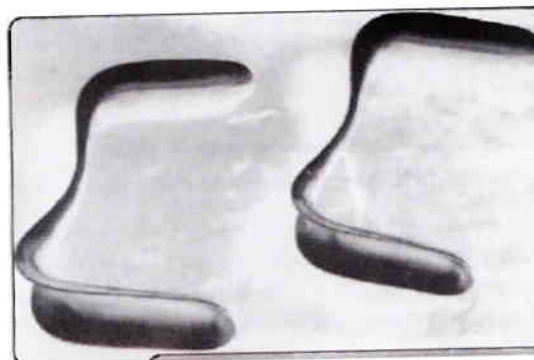
Fergusson speculum



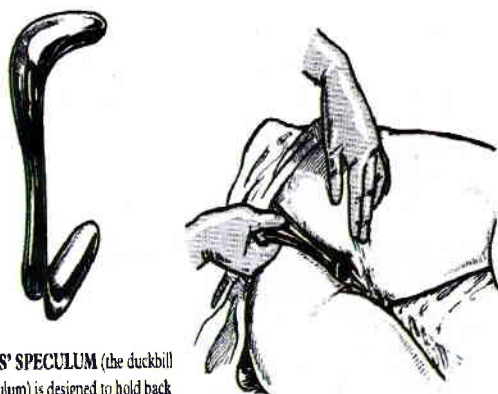
Collin speculum



Auvard's posterior wall self retaining speculum



Sims' speculum



SIMS' SPECULUM (the duckbill speculum) is designed to hold back the posterior vaginal wall so that air enters the vagina, due to negative intra-abdominal pressure, and the anterior wall and cervix are exposed.

In this picture the patient is in Sims' position (semi-prone) which is useful if the anterior wall is to be studied (e.g. if fistula is suspected).



Fenton dilator



Hegar's dilator



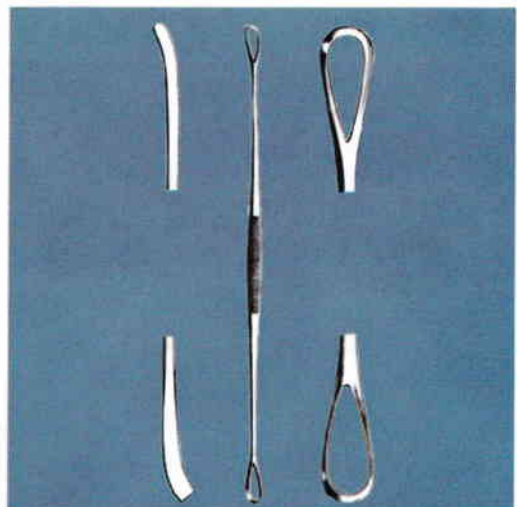
Hegar & Fenton dilator



Uterine sound



Single ended curette



Double ended curette



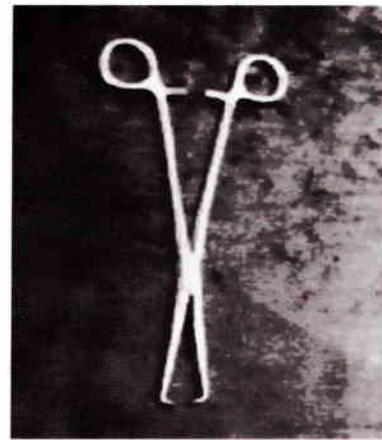
Novak cannula



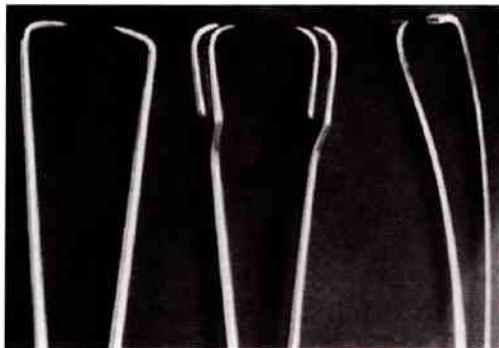
Flushing blunt curette



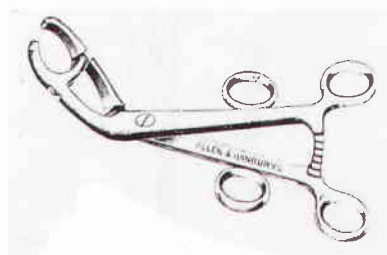
Fundal curette



Single toothed volsellum



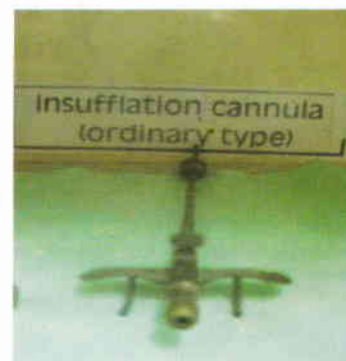
Volsellum



Bonney myomectomy clamp



Myomectomy screw



**Insufflation cannula
(ordinary type)**



Insufflation cannula (ordinary type)



Insufflation cannula (ordinary type)



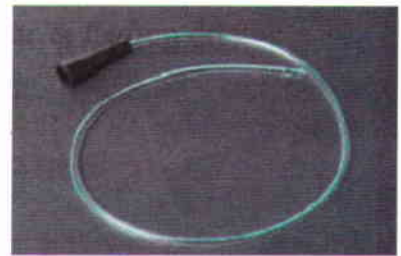
Insufflation cannula (Leech Wilkinson)



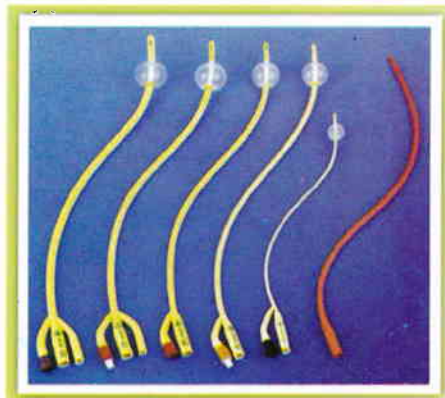
Uterine holding forceps



Female urinary catheter



Neleton catheter



Foley's catheter



Hysterectomy clamp



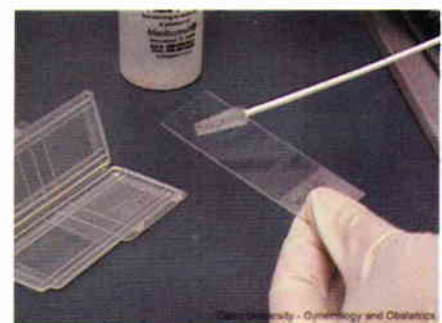
Kocher forceps



Artery forceps



Cervical biopsy forceps



PAP smear

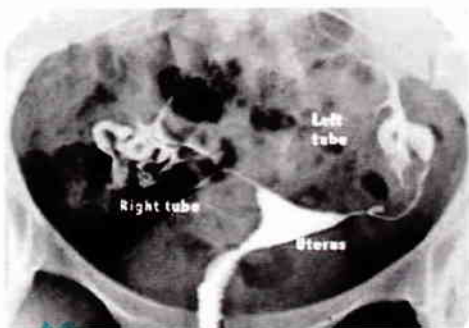
X rays & Hysterosalpingogram



Calcified fibroid



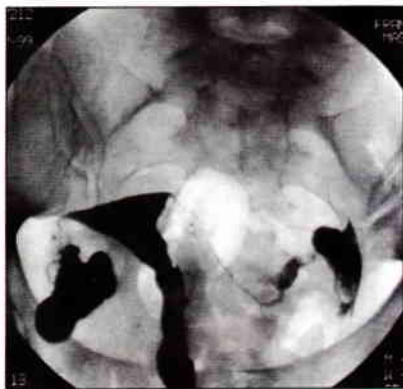
IUD intraabdominal



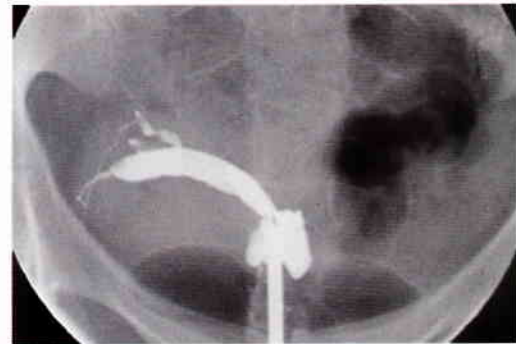
Normal HSG



Bilateral tubal block



Bilateral hydrosalpinx



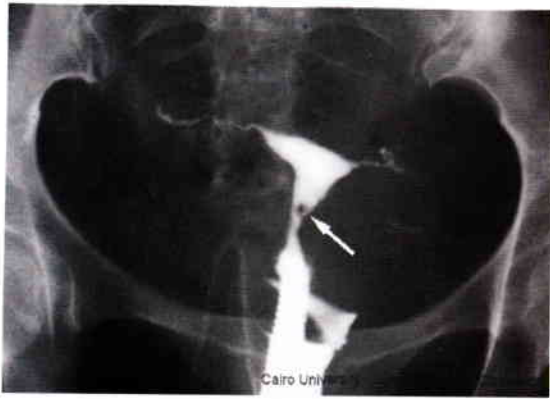
Unicornuate uterus



Bicornuate uterus



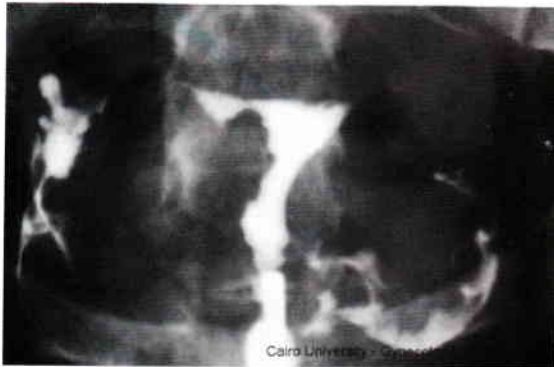
Filling defect



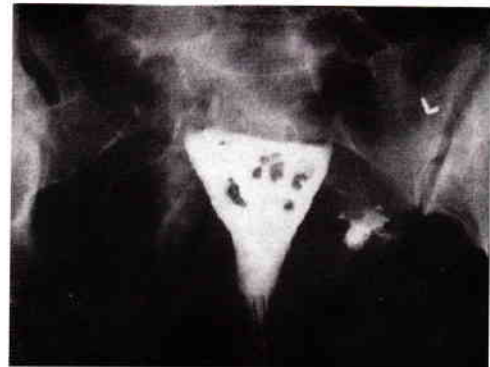
Filling defect



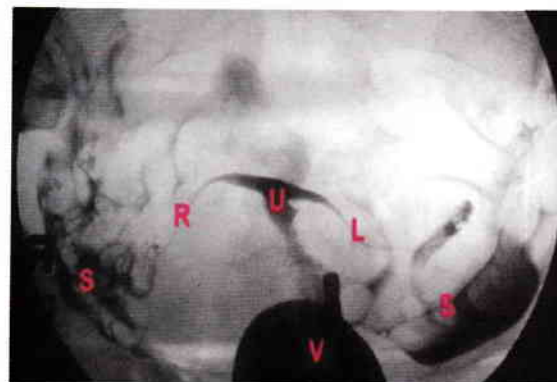
Filling defect (myoma)



Filling defect



Intrauterine synechia



**T shaped uterine cavity
(inutero DES exposure)**